ENGINEERING NEWS-RECORD

OCT. 16, 1958

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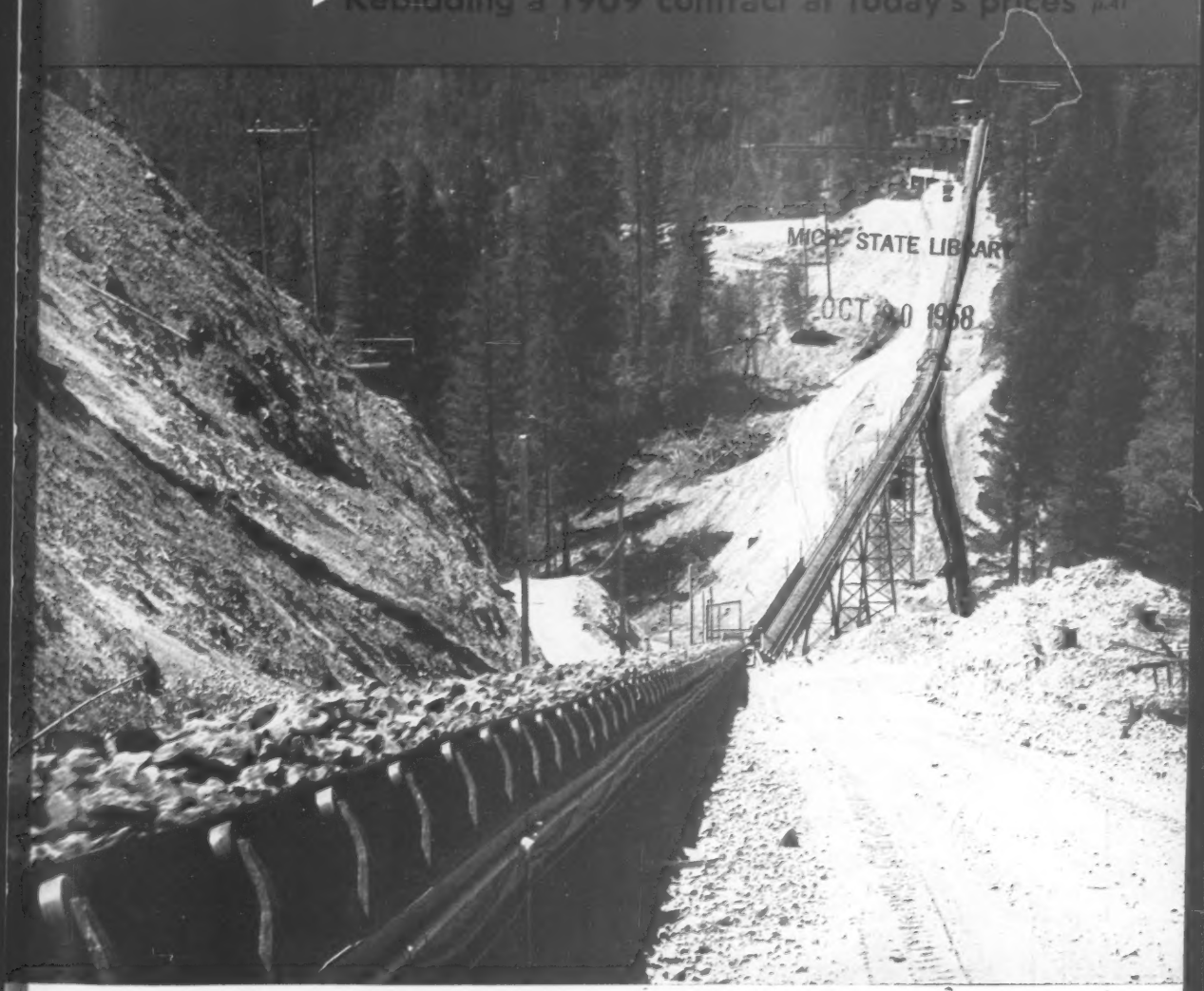

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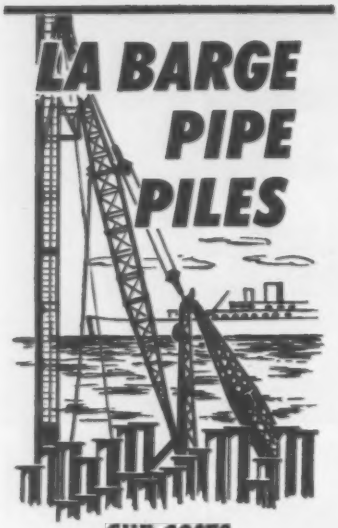

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ENGINEERING NEWS-RECORD, Vol. 161, No. 15, OCTOBER 9, 1958

Published weekly by McGraw-Hill Publishing Company, James H. McGraw (1860-1948), Founder. Publication Office, 99-129 North Broadway, Albany 1, N. Y. See panel below for directions regarding subscriptions or change in address. **Executive, Editorial, Advertising and Circulation Offices, McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y.** Donald C. McGraw, President; Joseph A. Gerardi, Executive Vice President; L. Keith Goodrich, Vice President and Treasurer; John J. Cooke, Secretary; Nelson Bond, Executive Vice President, Publications Division; Ralph B. Smith, Vice President and Editorial Director; Joseph H. Allen, Vice President and Director of Advertising Sales; A. R. Venezian, Vice President and Circulation Coordinator. **Subscriptions are solicited only from persons with identifiable commercial or professional interests in construction and building. Position and company connection must be indicated on subscription orders.** United States subscription rate for individuals in the field of this publication $6.00 per year, single copies 50 cents; foreign $20.00 per year, payable in advance. Second-Class mail privileges authorized at Albany, New York. Printed in U. S. A. Title registered in U.S. Patent Office.

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SUBSCRIPTIONS: Send subscription correspondence and change of address to Subscription Manager, ENGINEERING NEWS-RECORD, 330 W. 42nd St., New York 36, N. Y. Subscribers should notify publisher promptly of any change of address, giving old as well as new address, and including postal zone number, if any. If possible enclose an address label from a recent issue of the magazine. Please allow one month for change to become effective.

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for

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for Buckley & Company, Inc. Philadelphia, Pa.

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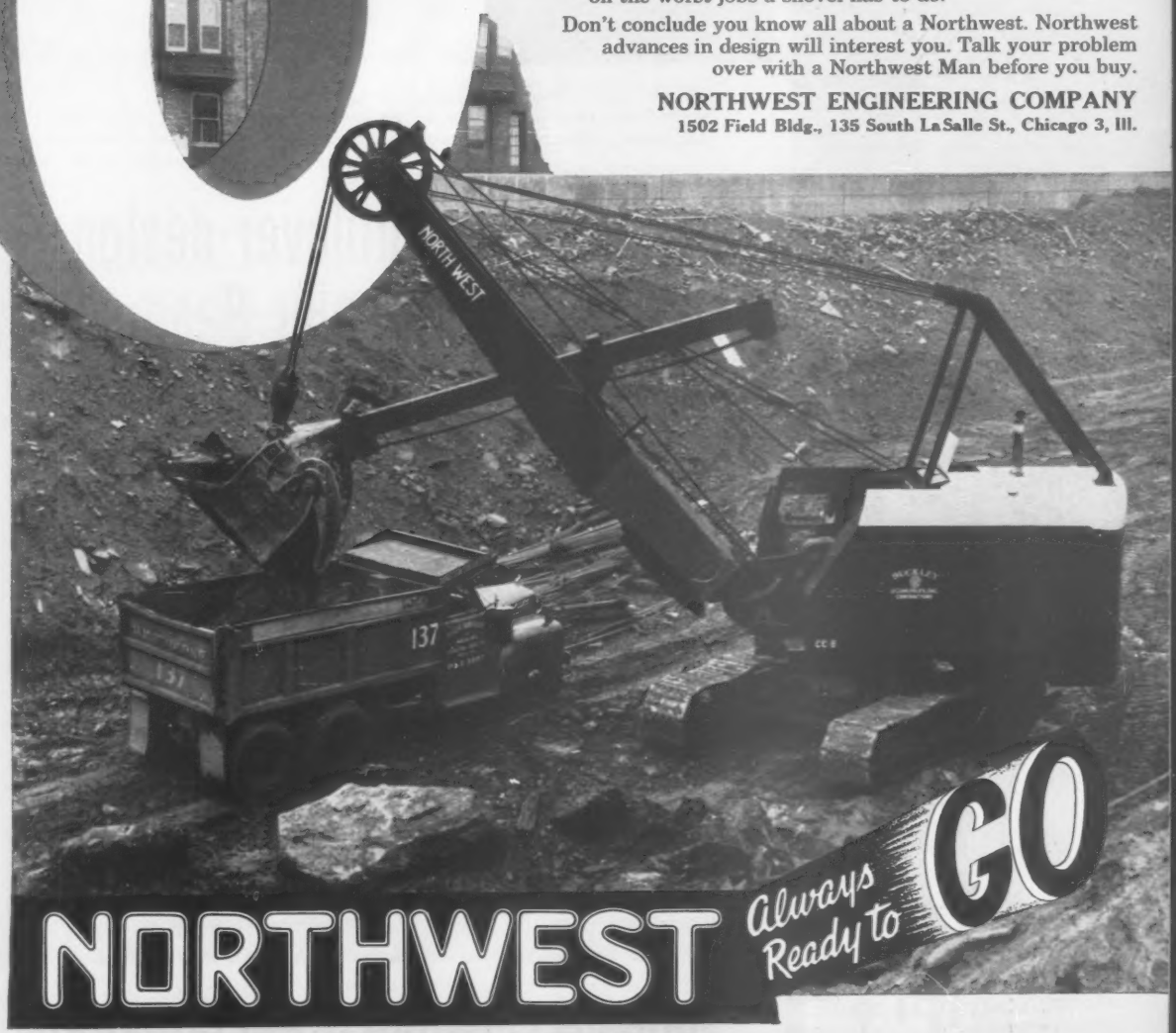

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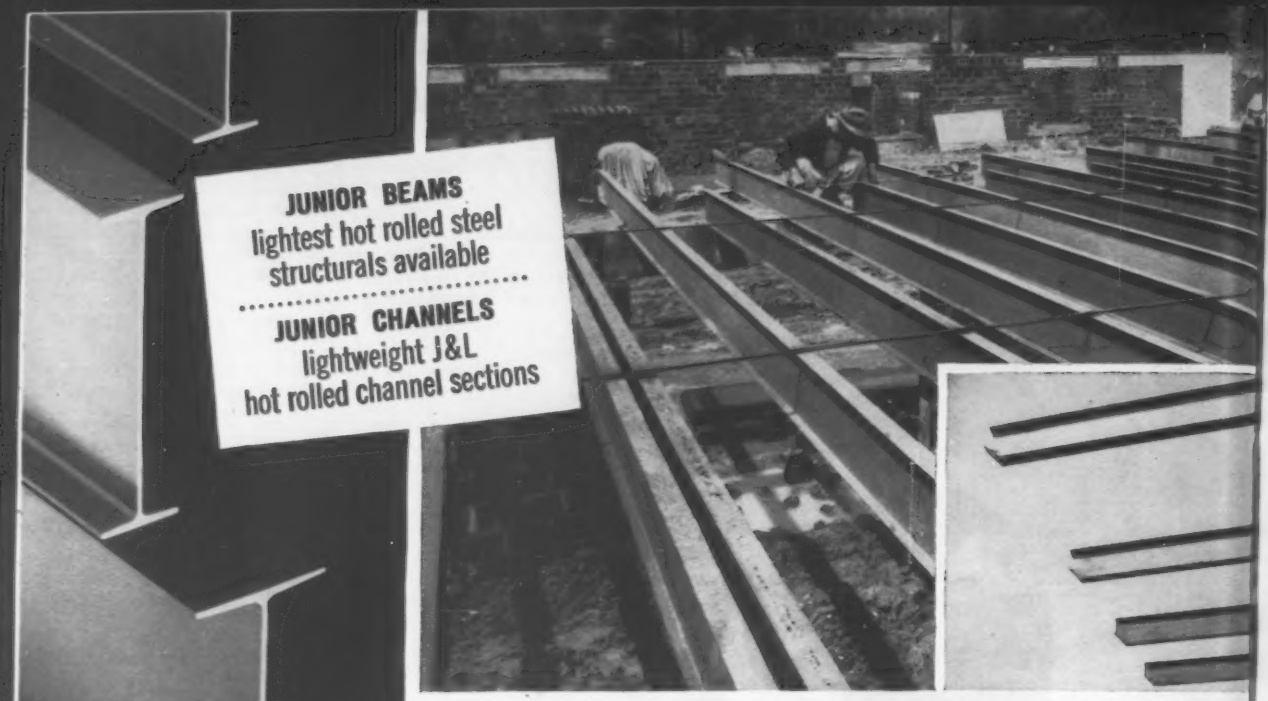

10″ (9#) Junior Beams are used in this two-story motel as second floor joists and as roof purlins. Second floor system and balcony will support a 40 pound per square foot live load.

"Unique cantilever design utilizes Junior Beams"

. . . says structural designer

Junior Beams play an integral part in unusual design of the new 210 unit South Gate Motor Hotel in Arlington, Virginia, one of the finest on the eastern coast. "We used Junior Beams in a cantilever design that placed the balcony floor at the same elevation as the second floor," reports Mr. George Fortune, of Fortune Engineering Associates, Alexandria, Virginia, the structural designer.

"This design eliminates steps from balcony into the units. The balcony is free of vertical supports," Mr. Fortune said. The three principal buildings utilize 170 tons of 10″ (9#) Junior Beams, lightweight steel structurals made by Jones & Laughlin Steel Corporation. The Junior Beams are used as second floor joists and as roof purlins. Fabrication and erection was done by the Southern Iron Works, Springfield, Virginia.

Two flights of stairs at each end of the balcony provide easy access to second floor units. The stairs are fabricated of 10″ and 12″ Junior Channels, lightweight J&L hot rolled channel sections.

According to Mr. John C. Wright, owner-contractor, the design provides fireproof, attractive buildings at low costs.

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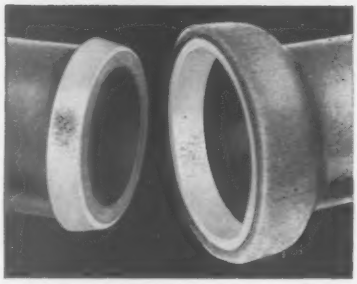

Never before in the history of the sanitary sewer construction industry has a product gained such immediate and wide acceptance and usage in such a short period of time.

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2 FACTORY-MADE QUALITY

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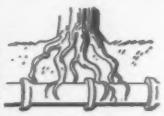

The design of the Amvit Joint is based on the ball and socket principle. The material on the spigot end is convex shape, with the bell in a concave shape. This permits easy and rapid installation. When the joint is made, it reaches maximum compression which results in a really tight line. Nothing can enter the line.

4 PREVENTS INFILTRATION

Due to the tightness of the joint, ground water cannot enter the line. Since infiltration is eliminated, the sanitary sewer does not have to carry anything other than that for which it was designed. This permits the use of smaller sized pipe in many instances and will reduce material cost.

5 BETTER FLOW, LESS MAINTENANCE

The design of the Amvit Joint assures self-centering which gives a smoother invert and better flow characteristics. Because the joint is really tight, no foreign matter such as dirt, sand, and stones can possibly enter the line.

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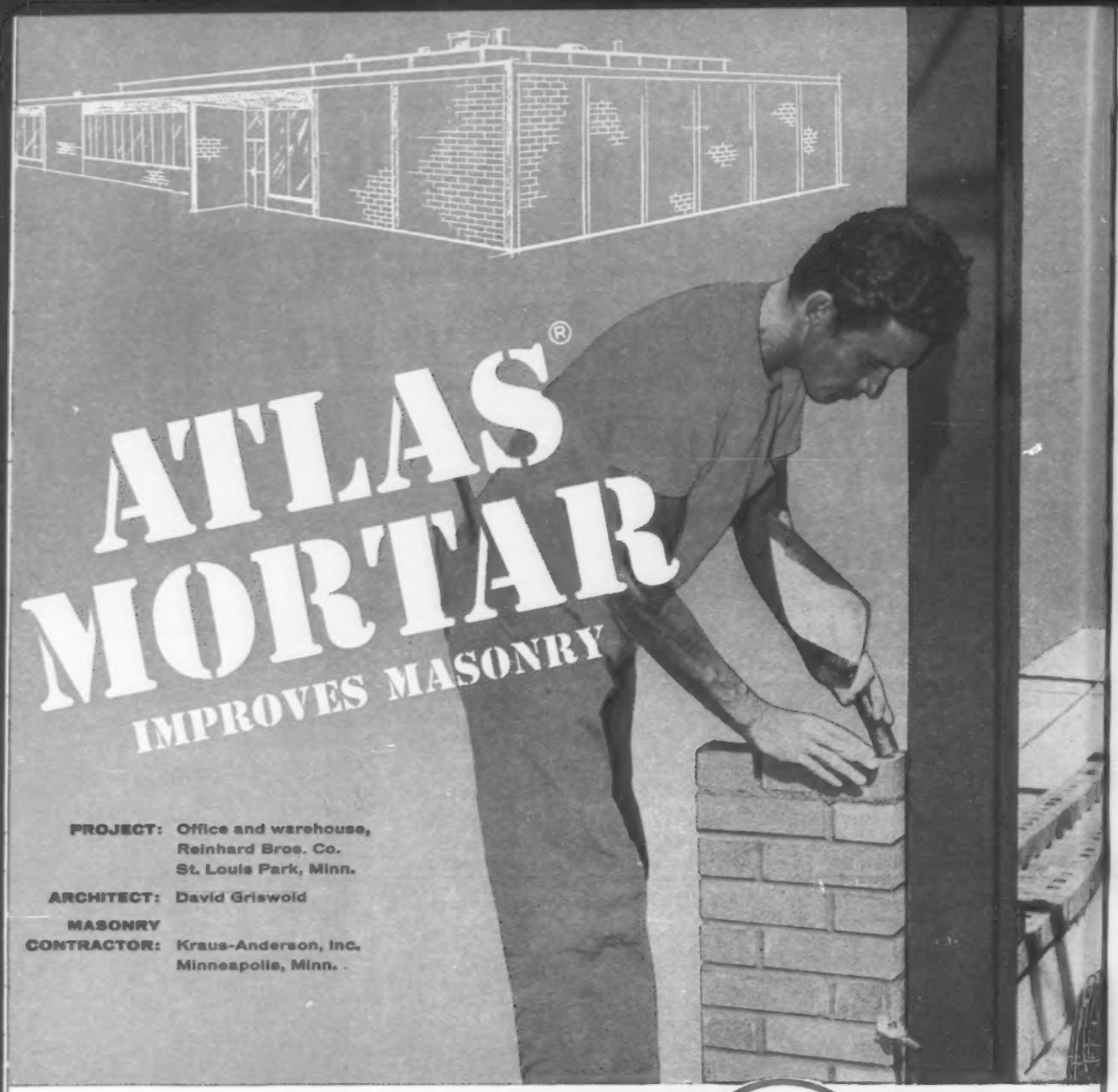

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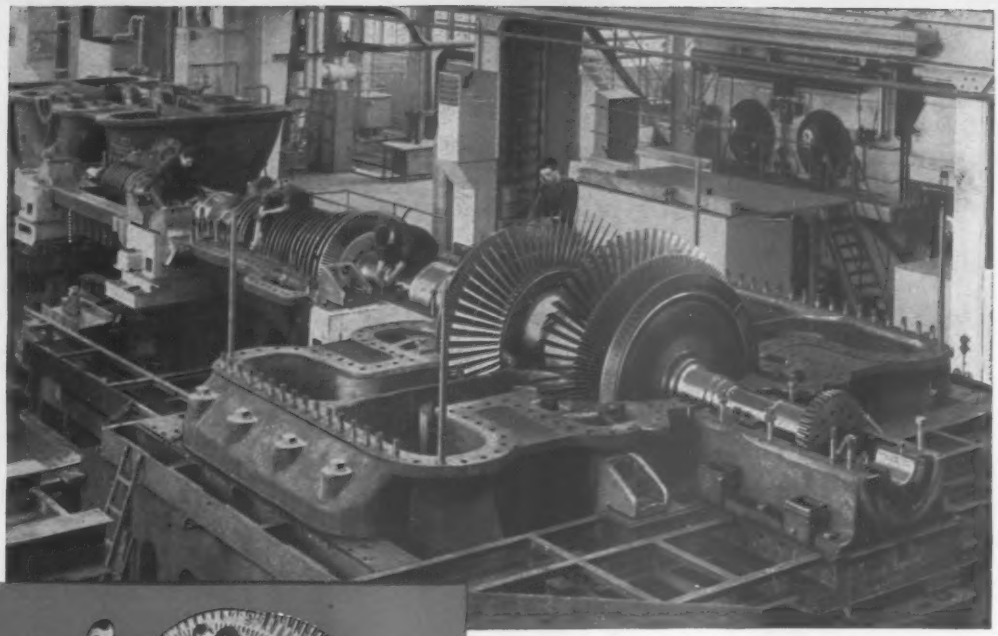

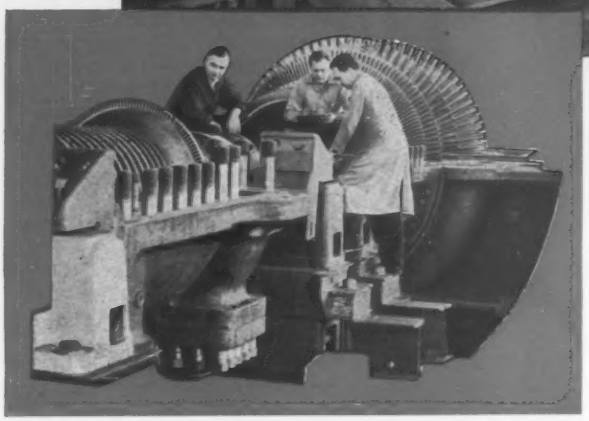

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Officials Favor Code Competition

SIR—Building officials and their three major organizations have been in the forefront of the fight against obsolete and conflicting building codes. They have contributed liberally of their time, energy and resources to prepare model building codes, which are recognized and acclaimed for their excellence. They have been directing the bulk of their efforts toward obtaining adoption of their codes and keeping them apace with progress in the building industry.

Building officials have done this splendid task without any ulterior motives; they have neither sought nor have they attained any financial benefits from these activities. As dedicated public servants they have striven only for the public welfare.

Your editorial in the Sept. 18 issue, "Building Code Chaos Continues," is, therefore, most unfair to the building officials organizations for their opposition to the proposal that the American Standards Association sponsor the development of a national building code for small residences (one to four families). The editorial assumes that such a code is practicable, that its formulation would cure many of the present ills afflicting the industry and that the objections of the building officials comes only from a few individuals in the directorship of their organizations. Nothing can be further from the truth.

The position building officials took on the proposal represented the opinion of practically all active building officials and of a great many persons in the building industry familiar with building codes.

• **Disadvantages of a standard**—The proponents of the proposal fail to realize that there is a world of difference between a code and a standard. They are not aware that if any code were adopted as a standard the building industry would be strait-jacketed. No standard can permit any variances of its requirements. On the other hand, no building code can be of any value if it does not permit the exercise of discretion by the enforcing official.

The proponents of the proposal, by their repeated emphasis on obsolete and conflicting codes, implied that formulation of a code for small residences would automatically cure afflictions that beset homebuilders and thus bring down construction costs. They do not realize that the preparation of any good building code, which is an expensive and tedious process, is only the first small step toward the goal. The real job comes in securing local adoption. There also remains the problem of periodic code amendments, so that the code may be kept from becoming obsolete.

Building officials saw these difficulties and therefore objected to the proposal. They agreed with the aim, to secure the benefits of a modern code; but they disagreed with the method. All the expected benefits of the proposal can be presently secured by any community adopting one of the present recognized codes.

• **Code competition wanted**—These codes do not conflict with each other, since each of the organizations sponsoring them centers its activity in a different area of the country. Their existence makes for competition in recognizing and adopting new materials and techniques in construction.

The objections of the building officials were not based on whim or caprice or selfish reason. Your editorial does them a disservice by failing to recognize their position and its unquestioned validity. It has no basis for the implication that if a uniform code were adopted it would be opposed by building officials. There has not been any sounding of opinion on that point, and no individual can therefore predict what such opinion would be.

Your belief that the building officials are strong enough to thwart this project, if instituted, is flattering. Analyzed and reduced to essentials, that thought can only mean that there are enough people in the industry who know what building officials have accomplished through their code work and how unselfish such work has been.

Others may twist their words, as did the proponents of the proposition, or misunderstand and misinterpret their actions, as you have done in your editorial, but building officials will continue their endeavors to obtain adoptions of their codes. This is a sure method of getting sound construction at a minimum cost.

BENJAMIN SALTZMAN
Second Vice President
Building Officials Conference of America, Inc.
Chicago, Ill.

(Editor's Note: In brief, the Sept. 18 editorial said that the building officials organizations should merge and back a single model code.)

(Reader Comment continued page 10)

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. . . Reader Comment

Should Engineers Draft?

SIR—I feel compelled to voice a protest to the view expressed by Maximil Grietens in his letter (ENR Sept. 18, p. 8) in which he denounces the use of engineers as draftsmen. The engineering profession and others connected with it should deplore and seek to eliminate via our engineering schools the growing tendency of new graduates to feel that their engineering diploma is a license to practice.

More and more young engineers have the feeling upon graduation that their training is over and they are ready to design. Engineering schools should make it clear to their undergraduates that their formal school is only part of their training, but that they are among a most fortunate class of professional men who will receive a very liberal compensation while learning the practical phase.

No engineering firm or contractor has sufficient trained engineers to assign to them aspiring young designers as proteges, nor can they afford to pay good money to a man to prowl around peeking over the shoulders of experienced men. Instead, they are hired and placed in positions where they can utilize some of the basic tools of their training, at the same time affording them the opportunity to observe what goes on around them and profit by it.

The young man, placed in the position of draftsman, or rodman or any of the lesser jobs engineers have started out on for years, may prepare himself for better things only in proportion to his willingness, powers of observation, and sincercity of interest. Bitterness over a misconstrued picture of his job stature will only close his mind and hamper him in his ambition.

JOSEPH R. PROCTOR, JR.
Dravo Corporation—Contracting Division
Warsaw, Kentucky

SIR—I never knew a topflight engineer who at one time wasn't a good draftsman and detailer. I won't hire an engineer who is poor draftsman. I'm sure others feel the same.

WILLIAM F. RYAN
Ryan Engineering Co.
Salina, Kansas

SIR—Participants on both sides of the "In Defense of Drafting" controversy may be interested in the following excerpt from a speech made over a hundred years ago by the designer of the Crystal Palace for the Great Exhibition of 1851 in London's Hyde Park, Sir Charles Fox.

". . . It was now that I commenced

How a Four-Man Crew laid 1500 feet a day of CLOW Bell-Tite® pipe through Florida swampland

CLOW cast iron pipe, with the sensational Bell-Tite joint, proved its advantages conclusively in this Clearwater, Florida, installation.

That a four-man crew was able to lay this CLOW Bell-Tite pipe at 1500 feet a day under these adverse conditions is definite evidence of the time, labor and money-saving advantages of this CLOW-designed joint. Two men worked in the trench—often in 3 feet of water. One man lubricating and aligning the joints, the other assembling with a pinch bar. A crane operator and a hook-up man completed the crew.

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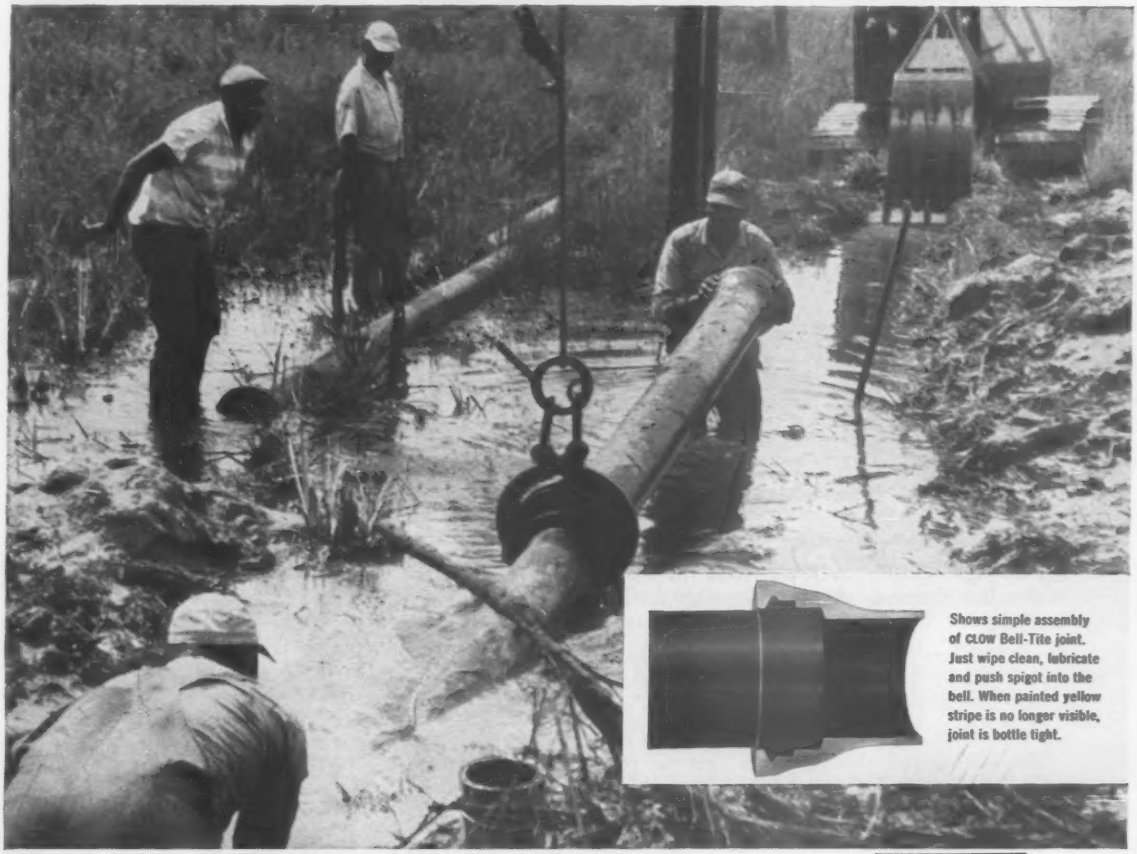

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Under-water assembly of 8" Bell-Tite pipe at Clearwater, Fla.
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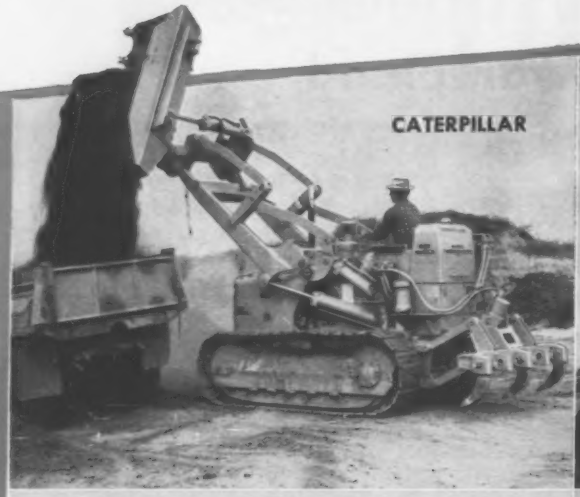

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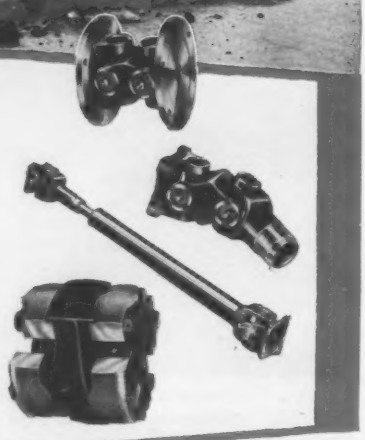

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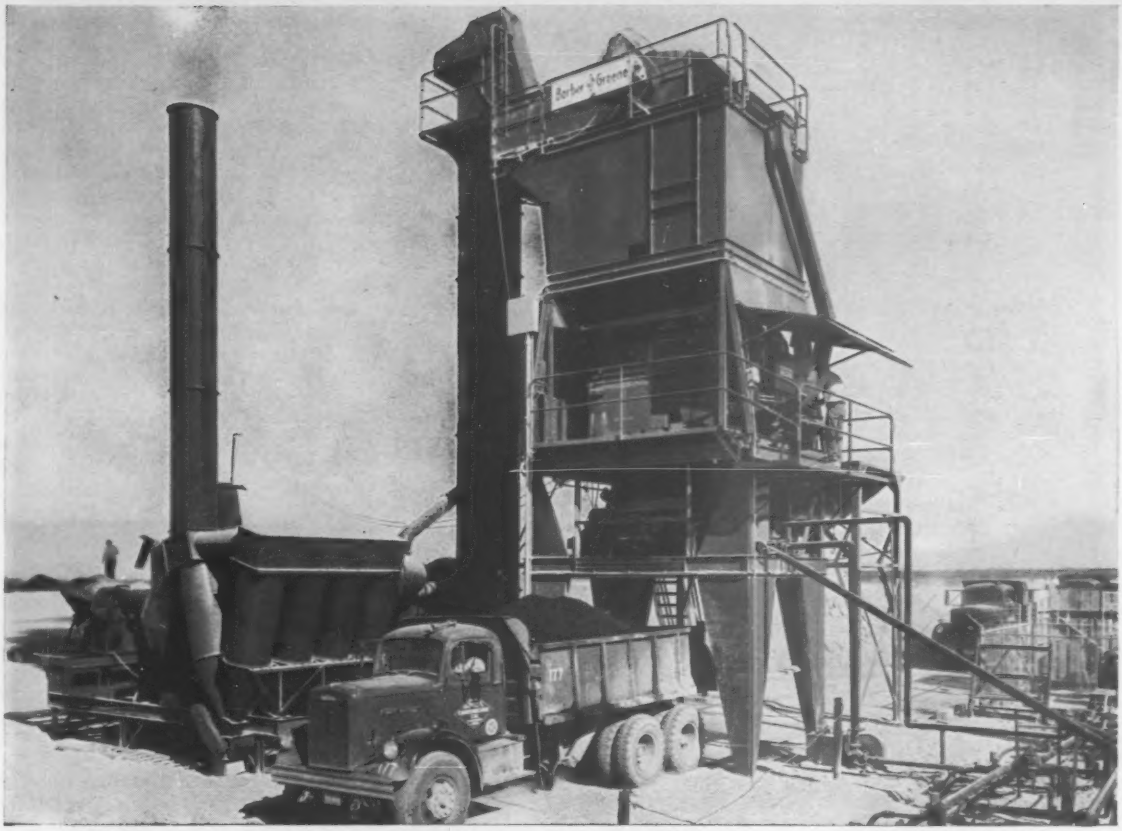

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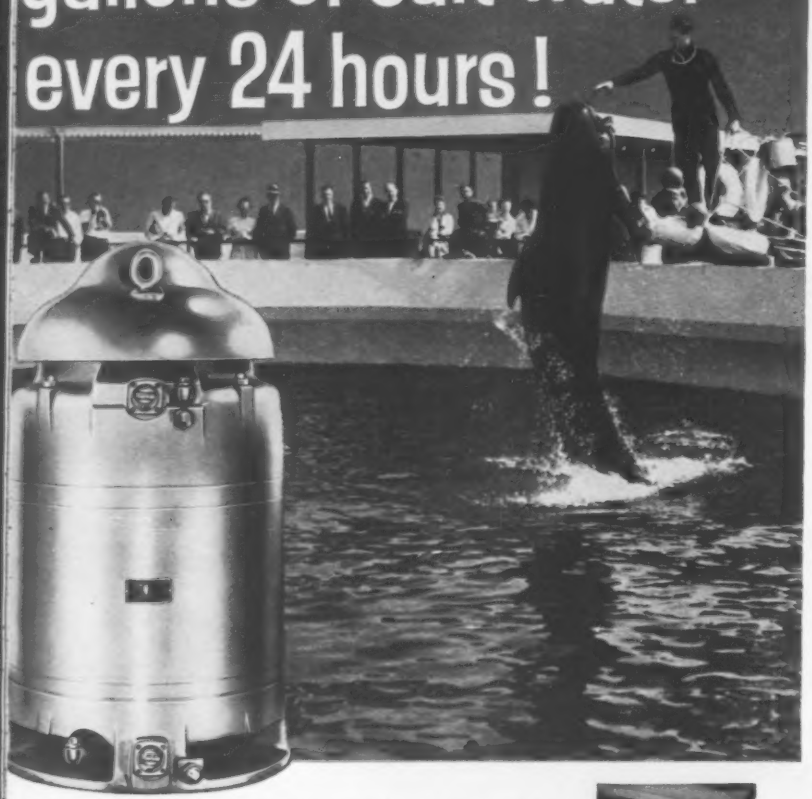

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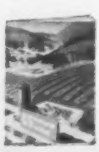


. . . Reader Comment

the laborious work of deciding upon the proportions and strengths required in every part of this great and novel structure. . . . Having satisfied myself on these necessary points, I set to work and made every important drawing of the building, as it now stands, with my own hand, and it was no small source of gratification to me, when asking Mr. Cubitt (the representative of the building committee) to look over the drawings I had prepared to find that he not only had no desire to suggest alterations, but expressed entire approval of them all. . . . The drawing occupied me about eighteen hours each day for about seven weeks. . . ."

It is probably superfluous to say that no such performance should be expected today, but it is interesting to note the attitude of the speaker towards the task of producing drawings, perhaps an infusion of this attitude by today's graduate can be acquired without a spell at the drawing board, but it seems rather strange to expect fluency in the language of engineering without first learning its vocabulary, grammar and syntax.

CLIVE J. GRANT
Pittsburgh, Pa.

Sir—I am afraid Maximil Grietens is sadly mistaken when he suggests the young engineer is wasting his time at the drawing board. As a British engineer now resident in the U. S., I have been appalled at the lack of drawing skill shown by most engineering graduates. I feel that it is an essential part of training for the engineering profession for a man to be able to express his ideas on the drawing board, and this requires a certain amount of drafting skill.

A doctor is never allowed to practice until he has served as an intern in a hospital, and the lawyer usually commences his career doing very menial tasks.

I am not suggesting that the young engineer waste several years sitting at the drafting table, but at the same time mastery of the draftsman's art is worth expending at least six months of a career which will extend for many years.

P. Woodward
Chicago, Ill.

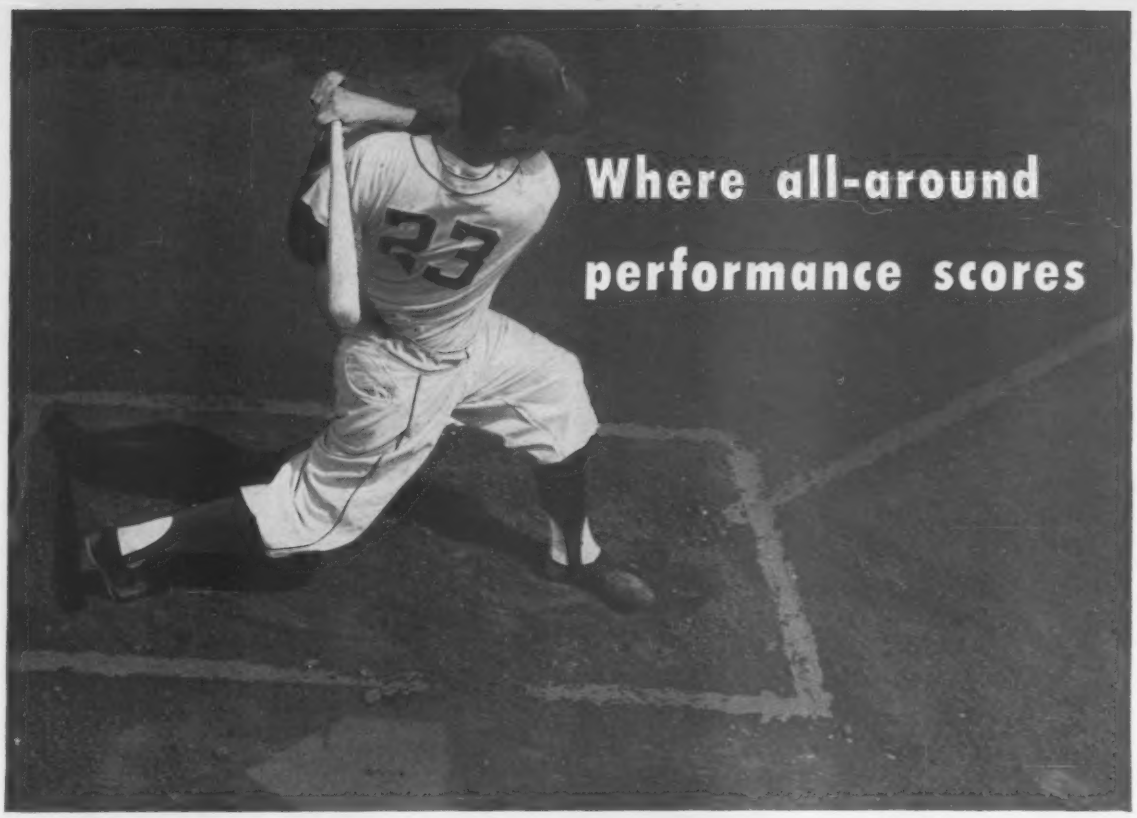
CALENDAR

National Conference on Industrial Hydraulics, sponsored by Illinois Institute of Technology, Sherman Hotel, Chicago, Oct. 16-17.

National Society of Professional Engineers, fall meeting, St. Francis Hotel, San Francisco, Calif., Oct. 23-25.

American Concrete Institute, regional meeting and headquarters dedication, Statler Hilton Hotel, Detroit, Oct. 27-28.

International Asphalt Congress, third meeting, Paris, France, Oct. 27-29.



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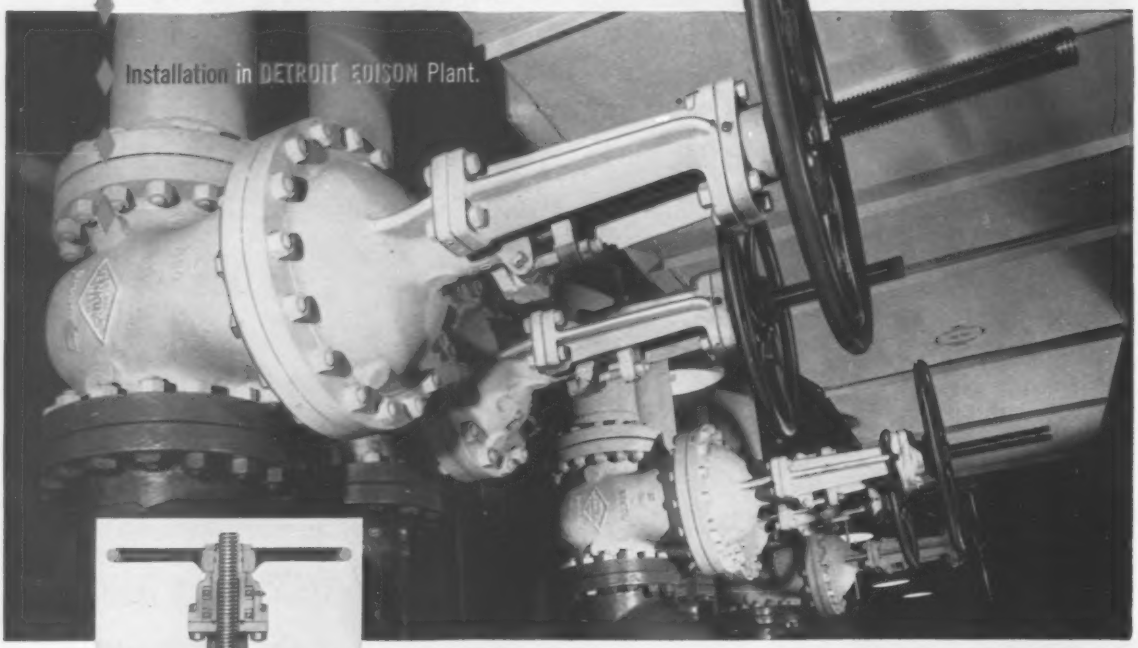

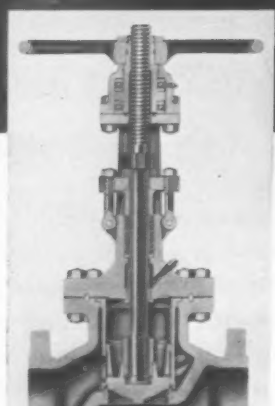

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THE CONSTRUCTION WEEK

NEW ERA TAKES OVER—The "Flea Market," a tourist-must in Paris, will soon be just a memory. The cluttered stalls where junk is sold as "priceless art," and sometimes priceless art is sold for junk, will be destroyed. Before the year ends it will give way to apartment buildings, a hospital, school and sports field.

STEEL BREAKTHROUGH COMING?—Ford Motor Co. reports that steels with tensile strength close to the theoretical ultimate of 1 million psi are coming closer. Their laboratory has developed a steel with a tensile strength of more than 400,000 psi, a fatigue limit of 200,000 psi and good ductile properties.

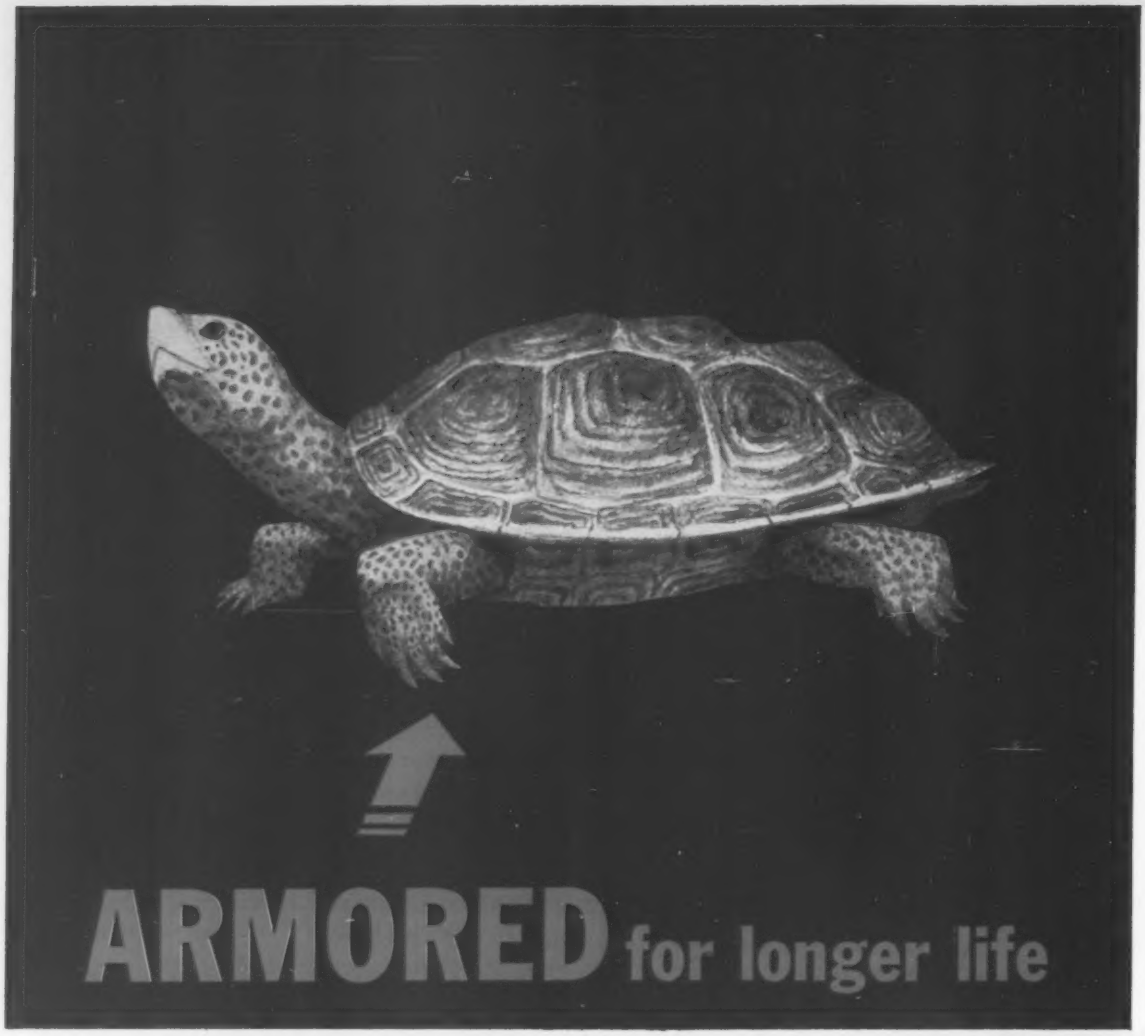
EMPLOYMENT DOWN—Construction employment dipped slightly last month. There were 2,928,000 workers on the job in mid-September, the government reports. That's a decline of 32,000 from August. Most of the drop came in the building field—highway construction remained stable. Employment normally begins to slacken in the fall. It's down 700,000 for the nation as a whole.

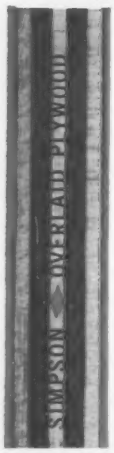
"CAT" STRIKE—Some 20,000 United Auto Workers went out on strike early this week at Caterpillar Tractor Co. plants in Peoria and Decatur, Ill., and York, Pa. Big obstacle to a quick settlement is a union demand for company-wide bargaining instead of plant-to-plant talks. Caterpillar has offered the union terms similar to those granted by the auto companies.

HOUSING AID?—A promise to recommend at least another $1 billion to support low-cost FHA and GI housing comes from Rep. Albert Rains (D-Ala.). He is a ranking member of the House Banking and Currency Committee and chairman of its housing subcommittee. He is also urging the immediate release of $400 million in mortgage support funds frozen by the Administration.

EJC TO RE-ELECT NEEDLES—Nomination for a second term is tantamount to re-election for Enoch R. Needles, who has headed Engineers Joint Council for the last year. The consultant (Howard, Needles, Tammen & Bergendoff New York City) will have another year to push his efforts to make EJC the voice of the engineering profession.

NO NEWS WAS BAD NEWS—Long Island didn't know it 'til last week: A Corps of Engineers policy established last July means state and local governments there will have to pay more for beach control projects. They formerly paid 30% of repair and protection costs for normal erosion, nothing for hurricane erosion. Now 30% local participation is required for both.





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FD-85-B

WASHINGTON OBSERVER

- Tight credit sends builders shopping
- Bid-shopping fight is dropped
- Commerce bids for construction data
- CAA sets airstrip measurements

● **An increasing number of builders and lenders are offering government-backed mortgages to the Federal National Mortgage Association.** The increase has been noticeable since September 15, when Fannie Mae cut off applications for direct government purchase of mortgages. The secondary mortgage operation requires the borrower to buy Fannie Mae stock as part of his cost of getting a loan.

Tightening credit has turned the builder back toward the secondary program. He has to invest 2% of the face of the loan in stock, Washington sees the increase as evidence that builders foresee a continuing healthy housing demand, contrary to reports from homebuilders.

● **The specialty contractors won't renew the fight for a bid-shopping legislation in the next Congress.** For several years, the National Electrical Contractors Association spearheaded the campaign; they were also representing a group of other mechanical specialty subcontractors.

They wanted a law requiring a general contractor on a government project to specify with his bid the principal subcontractors who would be working on the job for him. The prime contractor would have to stick with his list of subs unless he could give legitimate reason to the government's contracting officer for naming a sub within a limited time following the bid opening.

A break in the ranks of the specialty contractors last year took the steam out of the drive to get Congress to vote a bill. The House had voted such legislation in 1957, but after the plumbing contractors and plumbers union came out in opposition, efforts in the Senate collapsed, despite support by the leadership.

● **A new move is afoot to put all construction statistics in the Department of Commerce.** The chore of gathering and distributing them is now divided between Commerce's Census Bureau and the Department of Labor's Bureau of Labor Statistics.

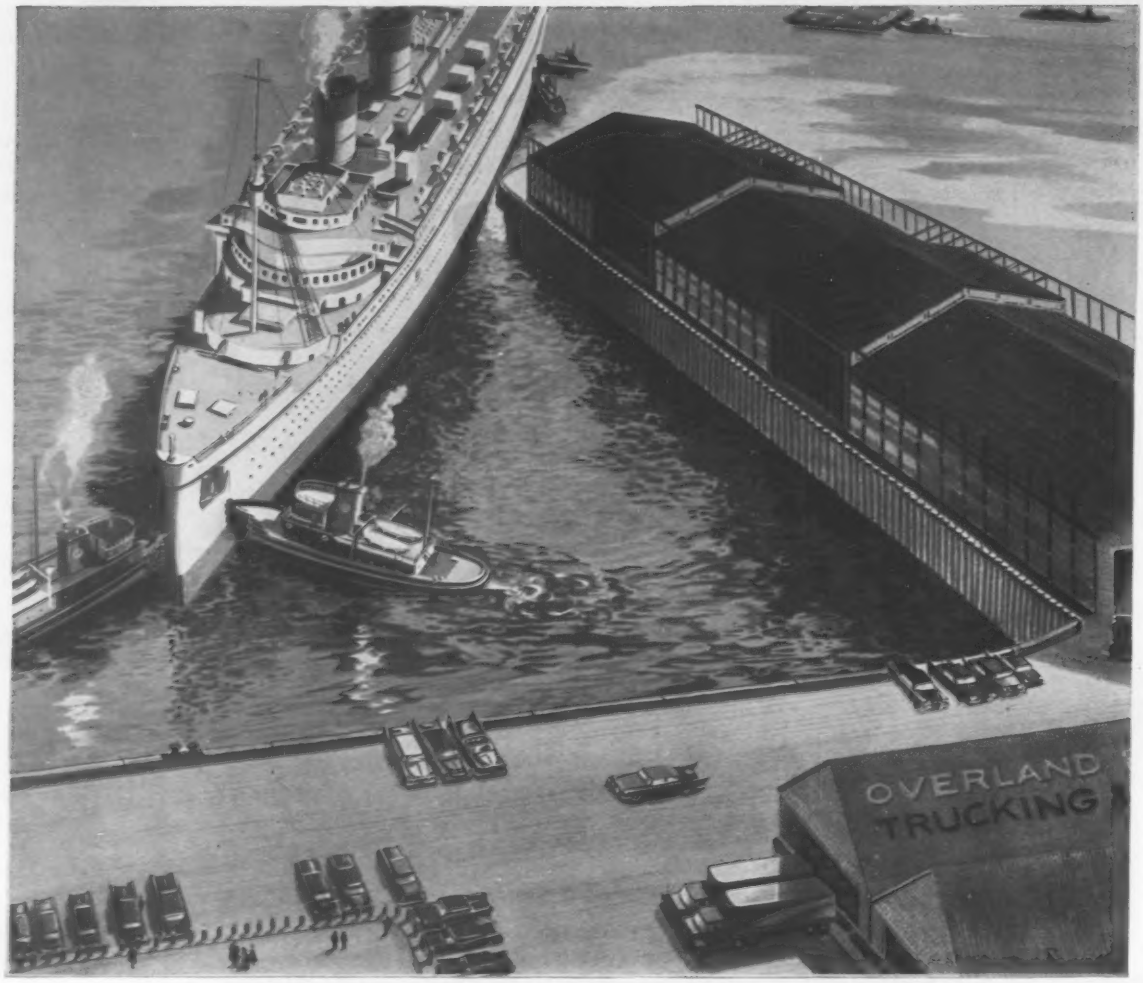
A move to do this last year failed when Labor Department officials objected. Now Commerce Secretary Sinclair Weeks is offering an exchange. He'll turn the entire employment-unemployment report over to Labor, in return for all responsibility for construction figures. Commerce conducts the unemployment nose count every month now; Labor gets a report from business on payroll statistics and the total labor force.

The decision to make the switch is now up to Labor Secretary Mitchell.

● **New lengths and widths for commercial airstrips have been set.** The Civil Aeronautics Administration on Monday reduced the classifications for air carrier service from six to four, and set these lengths: local, 4,200 ft; trunk, 6,000; continental, 7,500; intercontinental, 10,500. For widths, the new regulation provides for 150 ft in all categories except local, which will be 100 ft. The local category is for airports handling traffic up to 500 miles in distance; trunk up to 1,000 miles; continental up to 2,000; intercontinental, trans-oceanic and trans-continental.

The standards will be applied to federal-aid airport projects.

MARINE FENDERS



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Danger Ahead in Right-to-Work?

- **Labor says the movement is designed to reduce its power and doesn't have much to do with "personal freedom" for workers.**
- **Right-to-work supporters deny they're trying to hurt labor. They say all they want is a fair shake for the working man.**
- **It's the most complex labor issue in years. And it may wind up increasing the political power of labor . . .**

The current debate over right-to-work laws threatens to put more "friends of labor" in political office this year than ever before.

The election tally on November 4 will tell the tale. But there's growing evidence that the right-to-work movement will boomerang and long postpone the day of more restrictive labor legislation.

Seldom has a labor issue stirred the ranks of labor so deeply.

Why? Because union men think right-to-work laws have little to do with the right to work as such and a lot to do with additional curbs on labor. They view the movement as resurrection of the open-shop crusade of the early 20's, and the drawning, perhaps, of another era of "yellow dog" contracts.

Labor firmly believes right-to-work supporters are trying to reduce its strength. This is denied by right-to-workers. But the upshot is an issue that's likely to increase the political effectiveness of labor.

• **What's happening**—Unions everywhere are making the most of their opportunity. This is particularly true in California, where the building trades unions and other labor groups have started a new guessing game: $10,000 in prizes is being offered by a citizens committee to those who come closest to guessing the margin of votes by which the right-to-work proposal will be defeated. Top prize is $5,000.

Sponsors think this gimmick will make people read and analyze the proposal. And they're convinced that those who read it "will vote against it." They also think that it will "stimulate interest in the election." The scheme's big wallop lies in its power to damage candidates, such as Sen. William Knowland (R.), considered unfriendly to labor.

• **The record**—The battle cry of right-to-work promoters is "personal freedom." Labor believes this tells only half the story; and charges of "fraud" are being leveled against the movement.

To most of the general public, the issue is simply that of assuring a worker the right to hold a job without being forced to join a union.

But the other half of the story is also important in understanding labor's opposition and the support it's getting in many quarters.

Eighteen states now have right-to-work laws in the form of statutes or constitutional amendments. Ten of them are in the South, which traditionally has been hostile to labor unions. All the laws ban the union shop. The common language reads: "The right of persons to work shall not be denied or abridged on account of membership or nonmembership in any labor union."

Several of the laws also ban the agency shop, in which employees need not join a union, but must, instead, pay their fair share of the cost of the union representation they receive.

A few states ban only union shops created by contract. But most ban all practices that interfere with one's right to work as a nonunion member. Utah includes "lockouts, layoffs, boycotts, picketing, work stoppages or other conduct" in its definitions. Arizona and Nevada outlaw all attempts to induce any person "to refuse to work with a nonunion member." Texas bans organizational strikes, picketing and boycotts. Virginia allows unions to solicit for membership, if it doesn't interfere with "work of any employee during working hours." Alabama prohibits "employment monopolies." Arizona law is construed to ban union hiring halls.

All of this is summed up by labor in these words: "The right-to-work movement is aimed at the gradual destruction of the trade union movement."

It's this half of the story, which is generally left unsaid, that really bothers the unions. It's the half that gives significance to last week's defense of Labor's political action by AFL-CIO President George Meany, and to labor's concern over the current Republican call to arms against "certain politico-labor bosses."

• **Impact on construction**—The far-reaching implications of right-to-work laws are particularly significant in construction, where even the closed shop is deeply rooted.

The movement can throw further confusion into industry efforts to clean up hiring practices under the Mountain Pacific and Brown-Olds rules. Right-to-work laws also nullify the efforts of the building trades unions to get a legislative reversal of the secondary boycott ban represented by the Denver Building Trades case. This effort has the official blessing of President Eisenhower, but it's opposed by most contractors.

The right-to-work laws also tend to make a mockery of any attempt to legalize the prehire contract, which is void in any state with a right-to-work law; and they magnify the problems already created by the jurisdictional no-man's land in labor law (ENR Sept. 11, p. 173).

All of these problems played a role in the defeat of the Kennedy-Ives labor bill. And all of them explain the long campaign of the construction unions to get Section 14 (b) knocked out of the Taft-Hartley Act. That's the section that allows states to reverse the federal policy of permitting union shops. It's the umbilical cord of right-to-work laws. Until it's cut, any Congressional efforts to protect or enlarge the present organ-

izational rights of labor become empty gestures.

• **The arguments**—Now take a look at the political picture and some of the arguments.

It's generally believed that Senator Knowland's setback in the California primaries was due primarily to his support of the right-to-work proposal. Since then, the political delicacy of the issue has plagued a lot of the current candidates for office. Politically astute Vice President Nixon has avoided taking a stand on the issue. He and the President say it's "up to the states."

A more candid appraisal of the political implications of the issue came last month from Republican National Chairman Meade Alcorn. He refuses to endorse right-to-work laws as a "national political policy" and believes the problem is "a matter for determination by the states."

He said: "It happens to be my belief that the aggressive advocacy of that kind of legislation can only result in doing a thing which will be bad for labor and for the country. Namely, drive the rank-and-file of labor back into the hands of those who have been exploiting them."

Heading the movement is the National Right-to-Work Committee, led by Fred A. Hartley, Jr., co-author of the Taft-Hartley Act. Supporters include the U. S. Chamber of Commerce, the National Association of Manufacturers and the Associated General Contractors of America.

Opposition includes labor, various religious groups, the National Association for the Advancement of Colored People and the National Council for Industrial Peace, the counterpart of the National Right-to-Work Committee.

The present political front extends across six states—California, Colorado, Idaho, Kansas, Ohio and Washington—where the issue is going before the voters. Candidates for all of the House seats, for 34 Senate seats and for 33 governorships are being forced to face the issue.

General Electric Co., which has entered the California campaign, says "the real issue" is "freedom or force." Theologian Reinhold Niebuhr says the "real purpose" is the "weakening of labor under the guise of preserving or restoring individual liberties." Between these two positions are arguments of all kinds. Many are specious and some are sound.

One of the problems centers around use of the slogan, "right-to-work." Few people maintain the laws actually give workers the right to work or create jobs. Earlier this year, the Indiana Supreme Court said they do not "create employment, grant economic security or avoid spiral of recession and depression."

Probably the two most ticklish aspects of the issue relate to personal freedom and the power of organized labor.

Is the union shop a form of "economic slavery?" Does it violate our "personal liberties?" The late Senator Taft and Congress have said "no." Right-to-work supporters say "yes."

Labor, however, makes these points: A union shop is the result of collective bargaining. Passage of a right-to-work law is, in a real sense, governmental interference with that process. Workers represented in a bargaining unit have had a chance to vote for the union and to authorize or object to a union shop clause. The union shop doesn't survive the contract; when the contract expires the bargaining process is repeated. Workers can also eliminate the union shop or even ask for an election to decertify the union. Opponents of "right-to-work" ask if this adds up to "compulsion."

The question of union power ties closely to the McClellan committee investigations and Congress' recent problems with federal labor legislation.

Most right-to-work supporters deny any intention of weakening or destroying unions. But last week, teamster monitor Godfrey Schmidt said, "Hoffa is one of the best reasons for right-to-work laws." And an Ohio right-to-worker has said, "One of the purposes" of the proposed law is to "weaken unions at the collective bargaining table."

Such talk leads labor to ask this question:

If the elimination of union corruption or curbs on union power are the motives, are right-to-work laws an honest approach to the problem?

Moroccans Want U.S. to Leave

A monumental chapter in the construction industry's history—the crash construction program for the U. S. air bases in Morocco—is heading for an anticlimax.

The U. S. government and the 2½-year-old independent kingdom of Morocco are in secret negotiations this week to determine what will happen to the bases now. The Moroccans want us to get out; we want to stay at least five more years.

• **The project**—The Morocco base project began in early 1951. Four years later, construction work was finished on a network of four Air Force bomber, fighter, and supply bases, a naval air station and auxiliary facilities.

The military services poured more than $400 million into the project. They hired a combine of five construction companies and squads of other contractors to push the work through.

Construction was marked by significant advances in building technology—new pavement construction techniques, special design for steel hangars and concrete warehouses, and the like (ENR Aug. 27, 1953, p. 30). It was marked, too, by political squabbling over alleged waste, corruption and faulty planning.

• **The present situation**—Now the bases are caught up in the agitated anti-foreign sentiment sweeping North Africa. Privately, Pentagon officials are not alarmed that the bases will have to be evacuated. They're confident that some kind of settlement will be worked out to allow the U. S. to hold on to the bases for a couple of more years—probably for as long as B-47 medium-range bombers continue to be an important element of the Strategic Air Command.

Still, the Moroccan crisis points up the political vulnerability of overseas bases and jeopardizes current U. S. military capabilities.

To the Moroccans, under foreign rule for 44 years, the presence of foreign military forces symbolizes foreign domination. The elimination of French, Spanish, and U. S. troops has been a primary objective since Morocco achieved full independence from France in 1956.

U. S. base rights in Morocco stem from a 1950 agreement with the French. Contrary to Washington's advice, the French failed to notify formally the Moroccan king, who then had limited powers, of the treaty arrangements.

This is the crucial factor in Morocco's refusal to recognize the U. S. base rights now, even though the country promised to uphold diplomatic agreements made in its name by France.

The king and many of his advisers are essentially pro-Western, and they recognize that the 9,000 U. S. military and civilian personnel in Morocco are a significant factor in the country's underdeveloped economy.

But the Moroccan authorities are forced also to take into account the emotional clamor of its population—whipped up by left-wing trade unions and pro-Nasser nationalists—to "drive the foreigners out."

Washington insiders believe a U. S. offer of substantial economic assistance will help ease the way to a settlement.

The Moroccan bases were built under the direction of the U. S. Army Corps of Engineers.

Construction's Stake in the Elections

Forecasts of strong Democratic gains in Congress in the November elections do not necessarily mean a massive shift in policy of the government as a whole. But federal construction outlays will be affected no matter which way the government turns.

Some political observers already are saying the government during the next two years will be a "moderate" one. Two major reasons are given:

- President Eisenhower and his advisers still remain in control of the executive branch.
- The new Congress probably will be well-controlled by conservative Southerners.

Size of Democratic gains is the crucial factor. Observers do not now believe they will be large enough to push the Congress very far to the left. Estimates place Democratic gains in the Senate at four to six seats; in the House at 20 seats, give or take a few. But a Democratic landslide could result if there is a strong public fear of a recurrence of the 1957-58 recession.

Such a landslide would challenge the effective power of the Southern Democratic bloc and hamper its efforts to maintain a working coalition with Republican conservatives.

Whatever the outcome, there will be some new members of powerful committees dealing with issues affecting the construction industry.

- **Interior Committee shifts**—The most important changes will be in the House Interior Committee, assuming that Democrats will once more reorganize it.

Rep. Wayne Aspinall of Colorado, if reelected, will become chairman, a job formerly held by Clair Engle of California. Like Mr. Engle, Representative Aspinall would definitely lean toward the public side in the perennial public vs. private power disputes. Mr. Aspinall, no stranger to construction, is now chairman of the irrigation and reclamation subcommittee. He may also continue in this post during the next Congressional session.

The recent death of Rep. J. Harry McGregor of Ohio means changes on the Republican side of the House Public Works Committee. He was its senior Republican member. That position will fall to Rep. James C. Auchincloss of New Jersey, considered a sure thing in his bid for reelection.

Mr. McGregor's position as top GOP member of the roads subcommittee will be turned over to Rep. Myron V. George of Kansas, who also seems assured of reelection.

Retirement of Ralph Gwinn, ultraconservative New York Republican, gives Carroll Kearns of Pennsylvania the opportunity to move up as ranking Republican on the House Labor Committee. Representative Kearns is an Administration supporter.

- **The Senate picture**—Sen. Francis Case of South Dakota, a reclamation state, will become ranking Republican on the Senate's Public Works Committee. Sen. William A. Purtell of Connecticut, if he wins a tough race for reelection, can become the top minority member of the Labor Committee. (Sen. H. Alexander Smith of New Jersey and Sen. Irving M. Ives of New York have retired.) Senator Purtell, an Administration supporter, served two terms as president of the Manufacturers Association of Connecticut.

Retirement of Sen. Edward Martin of Pennsylvania will give Sen. John J. Williams of Delaware the opportunity to be the ranking Republican on the tax-writing Finance Committee. But he first must be reelected. This committee is presided over by Democrat Harry F. Byrd, Virginia.

- **A key race**—Among the hottest Senatorial races is the one between Rep. Clair Engle (D.) and Gov. Goodwin J. Knight (R.) in California. Representative Engle gave up his chairmanship of the House Interior Committee to make his bid for the California Senate seat.

Both candidates support federal construction of power facilities. Representative Engle is campaigning vigorously on the issue. Governor Knight favors federal power development of the falling water on the Trinity River.

With Minority Leader William F. Knowland running for governor of California, his place on the Joint Atomic Energy Committee is Thomas Kuchel's for the asking. He is also from California. One of the controversial issues before this joint House-Senate group is massive development of atomic electric power by the federal government.

Some important Democratic senators seem assured of election. They include Albert Gore of Tennessee, a principal author of the federal highway program; Stuart Symington of Missouri, advocate of a bigger, stronger Air Force; Dennis Chavez of New Mexico, chairman of the Public Works Committee.

On the Republican side, the following senators appear safe:

Barry Goldwater of Arizona, labor's arch critic; John W. Bricker of Ohio, another labor critic; Roman Hruska of Nebraska; Winston Prouty of Vermont; Arthur Watkins of Utah; and William Langer of North Dakota, who frequently bolts the GOP line.

Sen. Case, Nebraska, will be ranking GOP member of Public Works Committee.

Rep. Auchincloss becomes senior GOP man on public works, if he wins.

Rep. Aspinall is likely to be chairman of House Interior Committee.

Sanitary Needs Outpacing Construction

The crying need for sewage treatment facilities was detailed with facts and figures at the annual meeting of the Federation of Sewage and Industrial Wastes Associations last week in Detroit. And a panel of experts aimed tips at everybody concerned on how to build and run the needed plants at lowest possible cost.

Gordon E. McCallum and John R. Thoman, chief and senior sanitary engineer respectively, of the U. S. Public Health Service's Division of Sanitary Engineering, Water Supply and Water Pollution Control Program, reported on a PHS survey that shows:

- Nearly half the 96 million people in the U. S. served by municipal sewer systems don't have adequate treatment facilities; some have none at all.
- A third of our existing plants are not adequate for the 28.8 million people they serve.
- One plant in seven should be replaced.

• **Losing ground**—Bad as the situation is, it's getting worse, the study indicates. Ten years ago only one plant in ten needed replacing. And the replacement needs cited include no allowance for obsolescence, population increase, urbanization, improved treatment or cost of new plants in towns not now served by sewers.

We are spending more for sewage treatment plants than we used to. But it's still not enough. The latest PHS inventory of sewage treatment facilities shows an increase in both number of communities and total population served by plants (ENR July 10, p. 41). But it would take $1.8 billion just to clear up the present backlog of required construction. Much more will be needed in the future.

The Rockefeller report on the U. S. economy indicates that we ought to spend two to three times as much on water supply and disposal in 1967 as we did last year. Messrs. McCallum and Thoman agree:

"The rate of expenditure must increase still more sharply (than it has) to make inroads on immediate needs and still keep pace with the new needs of a rapidly increasing population."

The PHS report shows that big cities are doing a better job than small ones in taking care of their sewage treatment needs. Cities under 25,000 population account for slightly more than a third of the population served by sewers, but almost half the dollar needs. The reverse is true of cities over 100,000: they account for over half the population but less than a third of the dollar requirements.

• **How to economize**—In a symposium on cost cutting, W. W. Saxton, supervising pollution control engineer for Washington State's Pollution Control Commission, directed a word of advice on sewage treatment and plant construction to several levels:

State agencies—Don't consider your design guides as regulations; welcome constructive criticism concerning them from engineers, operators and manufacturers; and before adopting revisions, talk them over with these three groups. Help municipal officials pick engineers, maybe in concert with professional societies. Establish treatment needs according to conditions of receiving water, not just arbitrarily.

Consulting engineers—Include seasonal variations in field studies. Prepare an operations manual for each plant, including operating procedures, equipment maintenance schedule, as-built drawings of plant and expected effluent characteristics.

City officials—Pay for outside training for your operators. Adopt ordinances covering sewerage and sewage treatment.

Operators—Know what conditions you have to maintain in the receiving water.

Mr. Saxton also deplored the lack of sufficient predesign study. "Adequate collection and analysis of field data in planning sewerage systems is the exception rather than the rule," he says. But, he points out, it isn't all the engineer's fault. "When a firm submits a realistic engineering proposal based on a thorough field study, it simply does not get the job."

He gave an account of Washington's savings from using sewage lagoons. Since 1954, the state has built or is building eleven lagoons and has seven more in the planning stages. Construction costs of those completed and under construction have averaged $15.20 per capita. In contrast, conventional secondary treatment plants have averaged $35 per capita over the last five years, and primary plants $15.90 per capita.

E. J. Beatty, engineer-manager of the Urbana & Champaign (Ill.) Sanitary District, urged designing engineers to confer frequently with treatment plant operators during the design period. Lower operating costs can be built-in, he said, and operators can make valuable contributions toward this end.

Alfred W. Sawyer, partner, Hazen & Sawyer, New York City, advised against leaving too much to the contractor. The big extras, he says, are frequently of a type that can be averted by two or three extra borings or clearer plans and specifications. The contractor will figure out what he must, Mr. Sawyer indicated, but he will charge you for the service.

New treatment methods offer economies that can't be overlooked, according to Richard H. Gould, associate of Greeley & Hansen, Chicago engineers. Most standards now call for aeration tanks more than twice as large as they need to be under well established practices, he says, and for sludge digestion tanks, more than three times the necessary size.

• **Plant design manual soon**—The FSIWA-American Society of Civil Engineers manual on sewage treatment plant design will probably be printed by the end of the year, said Daniel A. Okun, sanitary engineering professor at the University of North Carolina and head of the FSIWA-ASCE joint committee on the manual.

Professor Okun told the conferees that important working committees should be built around paid cores. Volunteers are seldom efficient, no matter how dedicated, he observed.

Heads Sewage Group

William D. Hatfield was elected president of the 8,000 member Federation of Sewage and Industrial Wastes Associations at the organization's 31st annual meeting last week in Detroit. Retired superintendent of the Sanitary District of Decatur, Ill., and former vice president of the federation, Mr. Hatfield succeeds Kenneth S. Watson, of the General Electric Co., Schenectady, N. Y.

Mark D. Hollis, assistant surgeon general and chief sanitary engineer of the U. S. Public Health Service, was named vice president. H. H. Niles, Toledo, Ohio, was elected treasurer.

Sewage Aid Fight

Cities can lose battle over the federal-aid program

The battle over the future of the three-year-old program of federal aid for municipal waste treatment works is taking a new twist. The Administration is locking horns with its Democratic opponents in a contest that is sure to produce a heavier flow of dollars to the cities, whatever the outcome.

Congressional Democrats claim enough votes to enact a major expansion of federal construction grants assistance next year. With strong backing from municipal, conservationist and wildlife organizations, the Democrats will push legislation to double the present amount of federal aid from $50 million to $100 million a year.

The White House wants to discontinue direct federal aid and have the states run the program using funds from federal telephone tax revenues.

The Administration is ready to rebate up to $85 million a year in such taxes to replace the $50 million the states now get in direct federal grants for helping municipalities build sewage treatment plants.

The plan was developed by the Federal-State Action Committee, composed half of Cabinet members and half of state governors. This group was created by the White House and the Conference of State Governors to come up with a plan for getting the federal government out of the waste treatment grants field. The governors conference will be asked to endorse the plan in December.

• **Cities can't lose**—On the money side, at least, it is hard to see how the cities can fail to benefit no matter which plan wins. The White House is shooting for an early 1959 showdown. Treasury Secretary Robert B. Anderson and new Health-Education-Welfare Secretary Arthur S. Flemming, both members of the federal-state action group, have reiterated in the last few weeks the Administration's intention to:

• Ask Congress to enact the tax rebate scheme next year.

• Omit the usual budget request for the $50 million appropriation that would be needed to continue the existing federal grants program in the new fiscal year starting July 1.

Significantly, Mr. Flemming has promised that the administration will continue the present aid program in the event of a standoff in Congress. At worst, the cities will have to get along with another year at $50 million while the White House and Congress butt heads over rival plans to boost the ante to $85 or $100 million.

Enter Another Aluminum Bridge

Reynolds Metals Co. this week puts its own entry in the competition for the highway bridge market. Last month, Reynolds was among five metal producers and fabricators backing a light-gage aluminum highway bridge developed by Fairchild Engine and Aircraft Corp. (ENR Sept. 4, p. 25).

The new design, also of light-gage aluminum, cellular construction, was unveiled October 15 before a group of engineers attending the joint meeting of the American Society of Civil Engineers and the International Association of Bridge and Structural Engineers in New York City. The engineers saw a full-scale section, 13 ft wide and spanning 60 ft, undergoing tests at New York University under the supervision of Prof. James Michalos.

• **Curved beams**—The bridge was designed by Giorgio Baroni, New York engineer. Weighing about 10 psf, exclusive of pavement, it consists of 4 ft wide parabolic arches placed side by side and interconnected through an extrusion along the bottom edge. (The arches for the test section are 4 ft deep.) The $\frac{1}{8}$ in. thick metal is stiffened at frequent intervals by diaphragms between the arches. Main structural joints are welded. (The Fairchild bridge was composed of triangular beams.)

On top of each arch is a 12 x $\frac{1}{4}$ in. aluminum plate with Z-bar shear connectors attached, to assure composite action with the concrete deck. After the curved units are positioned on their supports, corrugated aluminum decking is fastened on top, spanning between the beams this decking serves as a form for the concrete slab.

The extrusions at the base of the arches are made of aluminum alloy 5083-H112. The remainder of the superstructure metal is 5083-O, an alloy that is highly corrosion-resistant (does not have to be insulated from concrete, according to a Reynolds engineer), easily welded, but costly. It has an 18,500 psi yield point and an ultimate strength of 32,000 psi.

The curved shapes are shop fabricated. They can be nested to form a compact package for delivery to a site.

• **Alabama may be first**—The first bridge of this type may be erected in Alabama, a Reynolds official announced Wednesday. John W. Chambers, chief bridge designer for the Alabama Highway Department, has notified the firm he is submitting to the Bureau of Public Roads for approval plans and specifications for a 234 ft bridge of the new design. It is being considered for a crossing of Big Wills Creek in DeKalb County.

The 12 x 60 ft section has been undergoing both static and dynamic tests at NYU. To date, it has been given dynamic loadings equivalent to the consecutive passage of 400,000 38 ton trucks. This is estimated to be equivalent to about 40 years of normal service. The tests will continue until the one-lane-wide structure has been subjected to the equivalent of 100 years of service. The testing device places a 35 ton load—almost twice design load—on the test section 20 times per minute.

Mr. Baroni, the designer, is a native of Italy and a former professor at the University of Milan. He is now associated with Roberts & Schaefer, consulting engineers.

Record Cantilever Bridge Completed

The dedication of the Greater New Orleans Bridge this Saturday will mark the successful conclusion of a major engineering feat. It is the longest cantilever bridge in the U. S.

Part of a 2.3 mile crossing of the Mississippi River between New Orleans and Algiers in Jefferson Parish, La., the steel trusses over the river have a main span of 1,575 ft. This is exceeded only by the two 1,710 ft spans of the old Firth of Forth Bridge and the 1,800 ft main span of the Quebec Bridge.

The new bridge, however, is the longest ever erected solely by the cantilever method.

But fast as the bridge builders were in erecting this record-breaking structure, they were not speedy enough to keep pace with the growth of New Orleans traffic. Congestion on both sides of the river compelled the Mississippi River Bridge Authority to open the $65 million toll crossing to traffic on a limited basis last April (ENR May 15, p. 50).

CANTILEVER TRUSSES of Greater New Orleans Bridge, longest ever erected by this method, have a main span of 1,575 ft.

• **High and long**—After Saturday's dedication, the bridge will carry four lanes of traffic over the Mississippi on its 52 ft wide roadway. Provision has been made for a reversible fifth lane if the need develops.

Since the bridge rises gradually from the shores to clear high water by 150 ft at midspan, it was necessary to construct extensive approaches on both sides of the main span. Their total length is 9,100 ft. Included are five deck-truss spans on the New Orleans side and three on the Algiers side.

The cantilever span has a total length of 3,019 ft and required about 16,500 tons of steel. It consists of 853 ft and 591 ft anchor arms, two 443 ft cantilevers and a 689 ft suspended span. The trusses, spaced 64 ft c-c, rise to a maximum height of 190 ft above the piers.

To keep weight down in the long spans, high-strength steel was used for some of the truss members. Having a yield point of 50,000 psi, it was allowed a basic design stress of 30,000 psi, compared with the 20,000 psi permitted for the A7 steel used elsewhere.

Biggest of the piers carrying the cantilever span is 550 ft from the river bank. It is 342 ft high. (Substructure construction and superstructure design were described in ENR June 21, 1956, p. 36.)

• **Cantilever erection**—Bethlehem Steel Co., holder of a $12.3 million contract for fabrication and erection of the cantilever-span steel, departed from conventional erection practice from the very beginning. Usual procedure at the start is to erect, with a crane on the ground, the first steel from the land-based pier to a temporary bent. Then a derrick is set on this section to erect the rest of the structure. To get a faster start, Bethlehem erected a falsework bent at the pier and had derricks on top before the bridge steel arrived.

A crawler crane erected the lower portion of this bent. A guy derrick, set on top of the uncompleted falsework, finished the upper portion and then erected the framing for a tower traveler and two stiffleg derricks, which were later used to place the bridge steel. Bethlehem worked from both sides of the river simultaneously, using similar equipment.

Heaviest pieces to be erected weighed 93 tons. A stiffleg of 115 ton capacity was chosen as a front, or main, derrick to erect all truss members and most of the smaller pieces. Equipped with a 57 ft mast, 115 ft boom and 6 ft jib, it was powered by a 200 hp diesel torque-converter hoist engine. The rear derrick on the main traveler was smaller; 25 ton capacity, powered by a 100 hp hoist engine.

Bethlehem mounted the equipment on top of a 110 ft high tower to raise the derricks high enough to set the 190 ft verticals and top joint over the river piers.

To erect the anchor arms, falsework bents were needed at four locations on the New Orleans side and three on the Algiers side. Bethlehem fabricated only two bents for each side and, by making minor field alterations, used them in several locations.

One bent presented the steel erector with a complicated situation; it had to be placed directly over the partly completed Thalia St. wharf. Rather than cut holes in the wharf's concrete deck to reach bent foundations below, Bethlehem decided to distribute the 2,800 ton falsework load over a large area of the deck. A steel-beam grillage was used to spread the load over a deck area supported on 51 columns. Only minor deflections occurred and later examination disclosed no cracks in the concrete deck.

The steelwork beyond the main piers was erected by cantilevering clear up to midspan. To keep erection stresses to a minimum during this operation, Bethlehem removed the hoists from the travelers and placed them some distance to the rear. Only enough stringers were installed in the center 10 panels to brace the floor beams.

• **Jacks close gaps**—The suspended span was erected with an upward camber, leaving a 10 to 12 in. gap at the top-chord closing point and a 1 to 2 in. overlap at the bottom-chord closing point. Using previously placed jacks, Bethlehem brought the ends of the cantilevers into alignment and they were joined.

The floor framing was erected next and a grid decking was placed on top and paved with asphalt. This was not done on the short anchor arm, however. There a concrete deck was used to counterbalance the long cantilever during erection.

Modjeski and Masters, Harrisburg, Pa., designed the crossing and supervised construction. Major contractors in addition to Bethlehem, which also built the approach superstructures, are Dravo Corp., Pittsburgh, for the four main piers and Boh Bros. Construction Co., New Orleans, for approach substructures.

Model Helps Engineers Check Complex Interchange Design

The intersection of four freeways in Los Angeles will be so complex that California highway engineers built a $17,000 model to double check their designs. Superimposed on the existing Santa Ana Freeway just east of downtown Los Angeles will be the starting points of the new Golden State, Olympic and Pomona Freeways. The interchange will require 32 new bridges in addition to existing Santa Ana Freeway structures. Construction is expected to start early in 1959 with cost estimated at $20 million. At one point, a section cut through the model would show 27 different traffic lanes.

California Engineers Draft Quake Code

New and modernized building-code provisions for earthquake resistance are in the making by the Structural Engineers Association of California. A draft of the new lateral-force code was approved by the SEAOC directors and distributed to the membership at the group's 27th annual convention held in Yosemite National Park.

The group also adopted a resolution urging legislation leading to better enforcement of the California engineers registration law.

The new earthquake code, after review by the SEAOC membership, will be submitted to the International Conference of Building Officials for inclusion in the Uniform Building Code. And there is a good chance it will also be adopted by San Francisco and Los Angeles, which both now have their own code.

Significance of the move is that engineers from northern and southern California have not agreed before on earthquake design provisions, which are very important in California. The new proposal is a compromise between different viewpoints. It incorporates a dynamic approach of the type originally developed by a San Francisco group (ENR Dec. 1, 1949, p. 21). And it takes into account the type of building frame.

The resolution on engineer registration is aimed at better law enforcement. It asks the legislature to provide for enforcement by injunction. Now violators must be prosecuted through misdemeanor charges brought in municipal courts. Registration can, of course, be suspended or revoked for code violations. But little success has resulted from attempts to prosecute unregistered violators.

• **High-strength reinforcing** – European use of high-strength steel in reinforced concrete was explained by George Wastlund, of the Royal Institute of Technology, Stockholm. Developed in the early 1940's in Sweden and Austria, these steels have yield points in excess of 50,000 psi. Compared with a design stress of 20,000 psi for hard grade deformed bars used in the U. S., design strengths of the European high-strength bars vary from 25,000 to 42,000 psi, and under special conditions may go even higher.

These high-strength steels must have a considerably higher bond resistance or a higher anchorage resistance than ordinary mild steel bars, according to Mr. Wastlund. Also, the highest grade Swedish steel bar (Kam 60) is limited in size to ⅜ in. Due to the difficulty of bending high-strength steel bars and because the deformations provide better anchorage, Kam steel bars are used without end hooks. The result, however, is that beam failure can occur immediately after the appearance of the first shear crack. It is therefore essential to provide stirrups in sufficient quantity to absorb tensile stresses in the concrete.

There is also risk of local splitting or crushing due to high local stresses in the concrete at bends of the reinforcing bars. Since only a few tests have been made to verify these phenomena, the problem is being met in one of two ways:

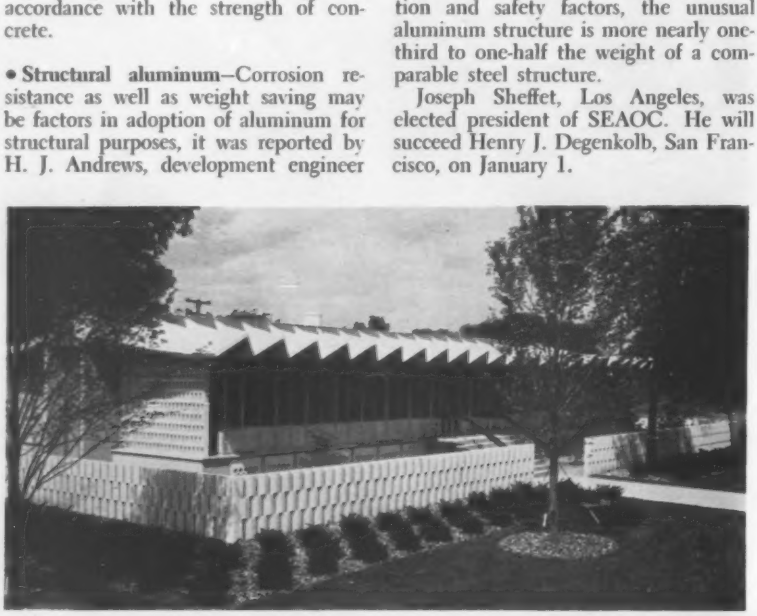
- By increasing the required radius of curvature as the stress in the reinforcement becomes greater.
- By keeping a constant and relatively large radius of curvature and varying the permissible steel strength in accordance with the strength of concrete.

• **Structural aluminum**—Corrosion resistance as well as weight saving may be factors in adoption of aluminum for structural purposes, it was reported by H. J. Andrews, development engineer for the Aluminum Company of America.

These factors in many cases compensate for the increased cost of aluminum. For example, aluminum structures are being specified in many applications solely for reduction in maintenance. In a period of rising labor costs, use of the proper aluminum alloy has brought significant savings by reducing or eliminating the need for paint protection.

In general, aluminum has a modulus of elasticity about one-third that of steel, Mr. Andrews stated. And there is a narrow spread between yield and ultimate strength that may influence the safety factor. In considering yield strengths alone, aluminum structures could be designed to weigh only 20% of similar steel structures. However, because of elasticity, stability, deflection and safety factors, the unusual aluminum structure is more nearly one-third to one-half the weight of a comparable steel structure.

Joseph Sheffet, Los Angeles, was elected president of SEAOC. He will succeed Henry J. Degenkolb, San Francisco, on January 1.



ACI Builds a Concrete Showpiece

The new international headquarters of the American Concrete Institute in Detroit, incorporating the latest techniques and developments in concrete construction, will be dedicated October 29. The ceremonies will climax the 11th regional meeting, October 27.

The building has a folded plate roof of exposed concrete, cantilevered from each corridor wall. Its sections were precast upside down to achieve sharp formed lines on the exposed surfaces. The roof connections were made by welding together plates that had been cast into the ends of the panels.

Exterior decorative concrete includes thin, precast, exposed-aggregate panels set in aluminum window frames, and heavier grade-level precast grills. All exterior concrete was coated with a vinyl paint.

The first floor of the structure forms part of the heating system; the longitudinal ducts in precast concrete planks carry heated air in the winter or cooled air in summer from the central supply ducts to outlets.

Architect was Minoru Yamasaki, Birmingham, Mich. Ammann & Whitney, New York City, was the structural engineer. Pulte-Strang, Inc., Ferndale, Mich., was the general contractor.

NEWEST ADDITION to growing U. S. airport facilities is Port Columbus (Ohio) Air Terminal Building. It can be expanded to three times present capacity.

Two Airports Get New Terminals

Nearly $10 million worth of airport facilities have been put in operation in two major U. S. cities: Columbus, Ohio, and Portland, Ore. And at both places the new installations have been designed and constructed with an eye toward expansion.

At Port Columbus about 150,000 people were on hand for the dedication of a $4 million terminal building, which capped more than a decade of efforts by city and airport officials for improved facilities. Part of the project—a $500,000 control tower and office building combination—was completed in 1955.

The newly opened structure is Y-shaped. Hub of the Y is an 84 x 103 ft lobby. The south wing of the building is 401 ft long and varies in width from 43 to 110 ft. The north wing is 260 ft long and 84 ft. wide. Leg of the Y is a 630 ft long passenger-loading pier with eight permanent gate positions. It can load 12 planes at the same time. The terminal can be extended to accommodate 27 permanent positions, according to J. E. Greiner Co., Baltimore, consulting engineer on the project.

The new building has 135,000 sq ft of floor space and an exterior of glass, aluminum and brick. The former terminal building, of pre-World War II vintage, will be used for cargo storage and freight forwarding offices.

Five airlines currently fly from Port Columbus and two more are awaiting final Civil Aeronautics Board approval before using it as a stop-off point for existing flights between Washington and Chicago and between Cincinnati and Detroit.

Garwick & Ross, Columbus, was the prime contractor.

The other new facility just opened is the International Airport Terminal Building in Portland, Ore. This $5.8 million structure has 18 plane-loading positions and is designed to handle a traffic volume of one million passengers annually.

The main building is 500 ft long and three stories high, with the terminal tower rising an additional six stories. Its facade is made of glass and porcelain-enameled steel panels. The south concourse, including an international wing at the end, is 688 ft long and the north concourse is 548 ft long.

The building has two wide, double ramps and moving stairs between the first and second stories. Conveyors and hydraulic lifts are used to move baggage.

A second major runway, 8,000 ft long, will be completed in 1960. The new runway will be north of the terminal building and parallel to the existing 8,800 ft runway. Planned additions to the concourse and the addition of north and south wings will permit expansion up to 34 loading positions.

Ross B. Hammon Construction Co. was prime contractor. Architect was Burns, Baer, McNeil, & Schneider. Both are Portland, Ore., firms.

It's Full Speed Ahead at $17 Million Navy Hospital

Exterior walls neared completion last week at the new Portsmouth, Va., Naval Hospital. The hospital, completely air conditioned, rises 17 decks above a pile foundation. The T-shaped wings of the welded steel frame structure are 12 tiers high. Total cost of the project will be about $17 million.

The building was designed by Skidmore, Owings and Merrill of New York City and Hayes, Seay, Mattern & Mattern of Roanoke, Va. Tishman Realty & Construction Co., Inc., of New York City is the general contractor. Lehigh Construction Co., Allentown, Pa., erected the 5,000-ton welded steel frame.

Canada Plans Big Boost In Highway Spending

Well over $1 billion is going to be spent on roads throughout Canada during fiscal 1959—a big jump over $861 million estimated to have been spent for road construction and maintenance during 1958. And by 1973, this figure will hit $2.2 billion a year.

The forecast was made by G. A. Wagdin of Canada's Bureau of Statistics and the prediction voiced by H. J. Fleming, Premier of New Brunswick and president of the Canadian Good Roads Association. They took place during the association's meeting at Montreal September 29-October 3.

Canada's federal highway spending is expected to reach $115 million, compared with last year's $71 million. The major project is still the 4,470 mile long Trans-Canada Highway. As of July 31, 2,607 miles had been graded, 1,878 miles paved and 255 structures completed. Present agreements call for a paved highway across the width of Canada by December, 1960.

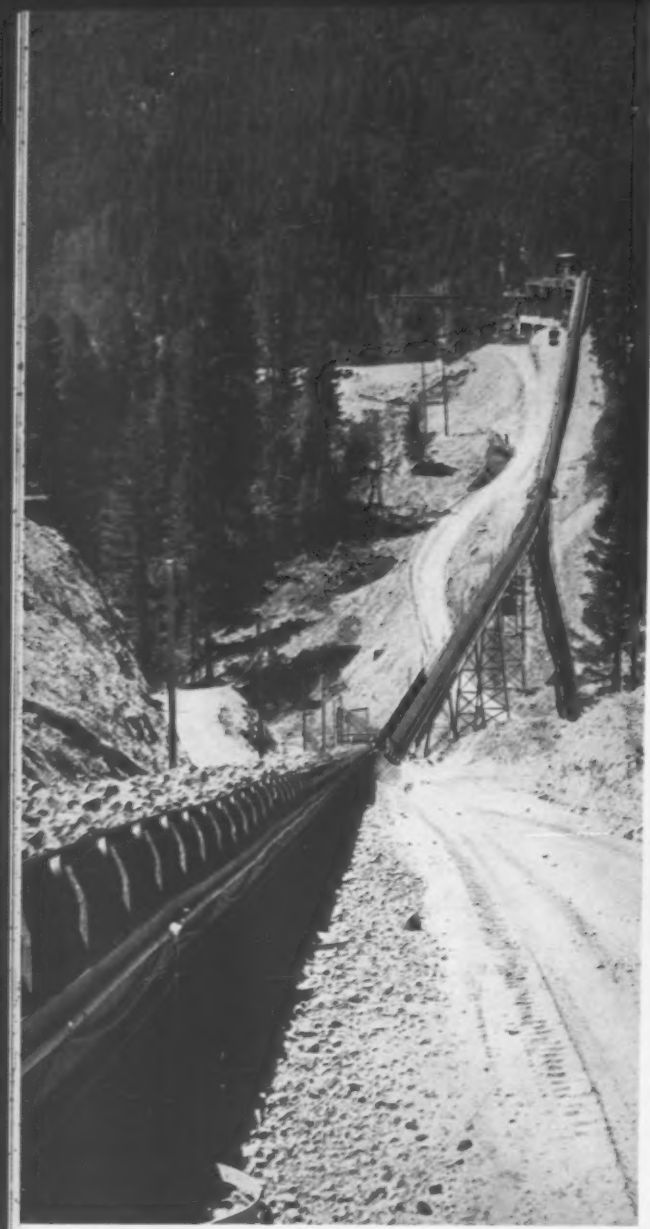
Contractors also were heard from at the meeting. The Road Builders Report for the Heavy Construction Association of British Columbia was delivered by George F. Grant, president of Storms Contracting Co., Ltd. He talked of trends in the Far West to "larger and larger machines," and went on to say that the 2½ yd shovel is being replaced by 3 yd shovels and in some instances even larger ones.

News Briefs . . .

• **Jets get the nod**—Jet runways will take priority over the long-planned expansion of terminal facilities at Houston International Airport. This was decided at a Fort Worth meeting between Mayor Lewis Cutrer and Civil Aeronautics Authority regional officers. Federal funds for the terminal expansion can be diverted to construction of jet runways for which there are no funds in sight, CAA men told the mayor.

• **Ohio River bridges**—The governors of Indiana and Kentucky have agreed to cooperate in financing surveys to determine feasibility of three Ohio River toll bridges proposed by Indiana. The bridges and approaches are estimated to cost a total of $21 million.

• **50 mile highway**—Wisconsin has revealed plans for relocation of a 50 mile section of U. S. 12 in the western part of the state. Cost is estimated at over $20 million. The new four lane divided highway would be built nearly equal to interstate system standards. Construction is expected to start in 1959 and be completed by 1961.



Costly conveyor was chosen over three-mile truck haul.

TO CONVEYOR: Scrapers haul fill to hopper.

FROM CONVEYOR: Fill goes to loading hoppers . . .

Two-Mile Belt Speeds Fill Haul at

A $2 million, high-speed conveyor belt almost two miles long is moving impervious fill material for the 30 million cu yd earthfill Trinity Dam in northern California.

And, in spite of normal shakedown mechanical adjustments, the belt has reached daily production rates in the 20,000 to 25,000 cu yd range early in its first season of operation.

Two more seasons will be required in order to place the 9 million cu yd of core material in the 537½ ft high structure—highest earthfill dam in the world.

Belt haul of impervious fill is not unique. It was used some 12 years ago at the Bureau of Reclamation Anderson Ranch Dam in Idaho. But quantities at Trinity are far greater and terrain is much more difficult.

However, any belt must be tailored to the material it handles. And this provides the most important difference between the Trinity belt and other conveyor systems.

Although there is a lot more to the Trinity Dam construction than impervious fill, the spectacular conveyor system overshadows in interest other phases of the work. Most of the other fill is a shovel and truck operation. And the contractor attempted to gain a whole season by a temporary diversion system during the 1957 construction season. But early fall rains and late spring runoff has almost completely offset the gain.

• **Downhill haul**—Trinity Dam Con-

Short belt takes fill from hopper to . . .

Crusher, which cuts size to 4 in. maximum for main belt.

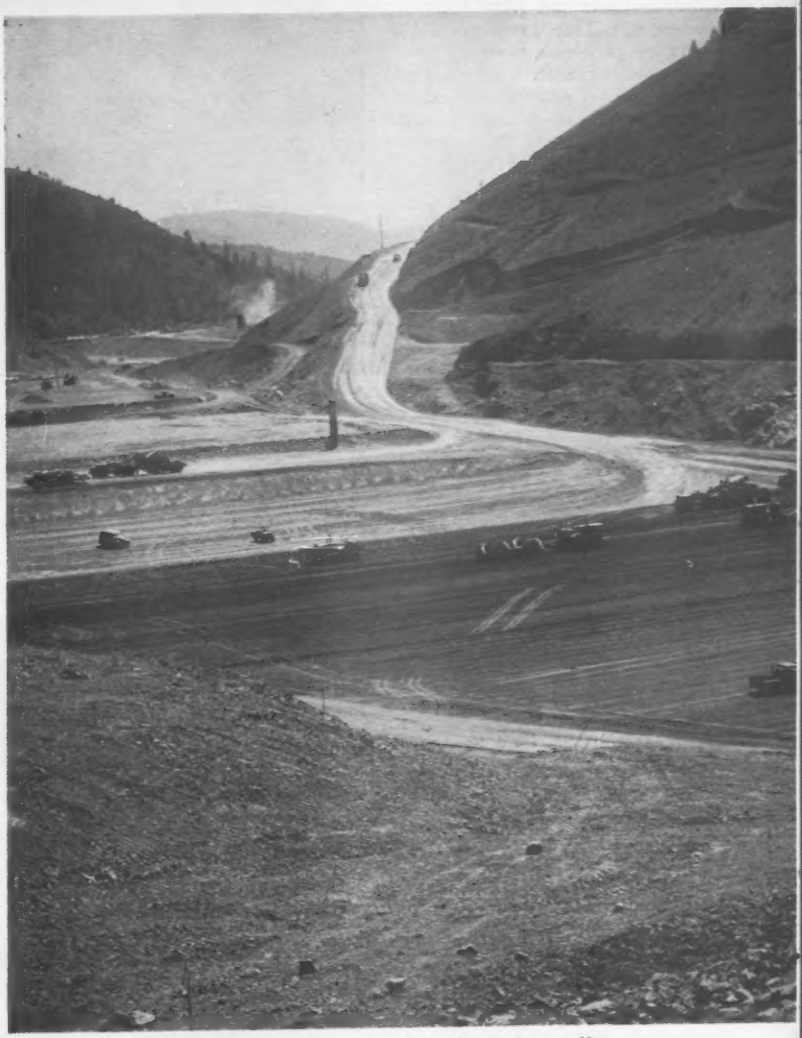
Scraper can load in 20 seconds.

Big Dam

tractors, a joint venture sponsored by Guy F. Atkinson Co., made a detailed economic study before selecting the belt haul method. The alternate was some form of truck haul.

The factor that weighed heavily in favor of the belt was a 1,200 to 1,500 ft drop in elevation from the borrow-pit to the dam.

Weighing against adoption of the conveyor was the fact that it is a sink-or-swim proposition. If for some reason the belt did not work or were out of



AT THE SITE, impervious fill is compacted by sheepsfoot rollers.

commission, no fill could be placed. Using trucks, on the other hand, production could be cut only by the number of trucks out of service. However, the disadvantages of a three-mile truck haul on an 8% grade, plus the conveyor's promised economy led the contractors to select the belt despite the $2 million initial investment.

Material hauled by the conveyor belt is a weathered andesite. Plasticity is far less than that of the more usual clay-type material used for impervious cores. In fact, the material can be typed as granular. Even so, all concerned agree that it compacts into the finest impervious core possible. The compactive effort—twelve passes of a heavy sheepsfoot roller—breaks the fine-grained material down even though there are many rocky fragments.

Though less plastic than clay, the weathered andesite is far more plastic than ordinary sand and gravel—particularly when wet. This introduces some belt-handling problems that are most acute at transfer points.

Borrow area for the impervious fill material contains 40 million cu yd. The deposit is relatively shallow, only 20 to 60 ft deep. Material is loaded by rubber-tired scrapers assisted by tractors. Some ripping is necessary.

After a haul of a few hundred feet, the scrapers discharge into one of two hoppers between slotted tire-track troughs.

The material is carried by a 48 in. wide belt from the loading station to a crusher station with three functions. It crushes material over 4 in., feeds the main belt and acts as the upper end control station. Crushing oversized material makes it easier to handle on the fill—a specification requirement—and makes the material easier to handle on the belt.

Original installation included single-roll rotary crushers, similar to those used in coal mining. These worked fine for the ordinary weathered andesite. But for the occasional hard boulders, the rotary crushers were converted to impactor type crushers by speeding them up and placing the rolls on eccentrics. This adjustment is typical of many of the shakedown changes that made the complex system work more effectively.

• **Belt inclines 25%**—The main part of the conveyor belt system includes nine flights of 42 in. wide rubber belting. Length of the flights vary from 1,895 ft center-to-center of pulleys for a relatively flat stretch to 655 ft for a steep flight. Five of the flights are at about a 25% grade while the remaining four have variable grades. A typical drop on one of the steeper flights is 162 ft.

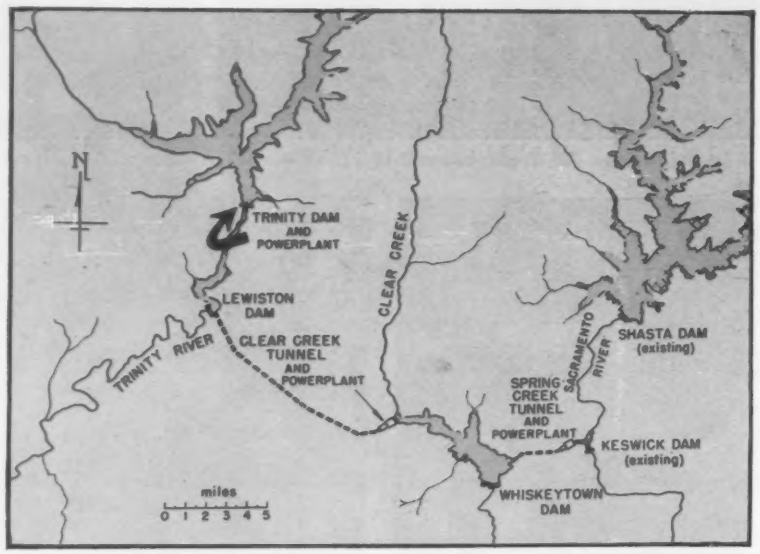
Controlling factor in establishing flight length is energy necessary to keep the conveyor under control. For most of the flights this energy was figured at 400 hp maximum. Much of the braking effort comes from electric motors that act as generators under full belt load.

A typical braking station will have a 300 hp electric motor. Originally there was an additional 100 hp motor on the same shaft. These are now being replaced by specially designed fans that provide increasing resistance as fan speed increases. The fan should be powerful enough to keep an unloaded belt from running away.

Also provided are mechanically operated brakes specially designed for the job. They are bigger than the brakes on a power shovel.

All of these control devices are coordinated electronically to stop the flights from top to bottom after they are unloaded, and to start them from bottom to top.

The belt operates well in excess of



What Trinity Dam Is For

Trinity Dam is the key unit in the Bureau of Reclamation's $225 million Trinity River Division of the Central Valley Project. Basic purpose of this work is to transfer an average annual yield of 1.4 million acre-ft of water from the Trinity River watershed to the Sacramento River system. It will be used for irrigation and other purposes throughout the Central Valley area.

The Trinity River flows into the Klamath River and then into the Pacific Ocean on the north coast of California. At the site of Trinity Dam, the river is some 1,500 ft higher than the Sacramento River only a few miles to the east. This represents a power potential of 370,000 kw.

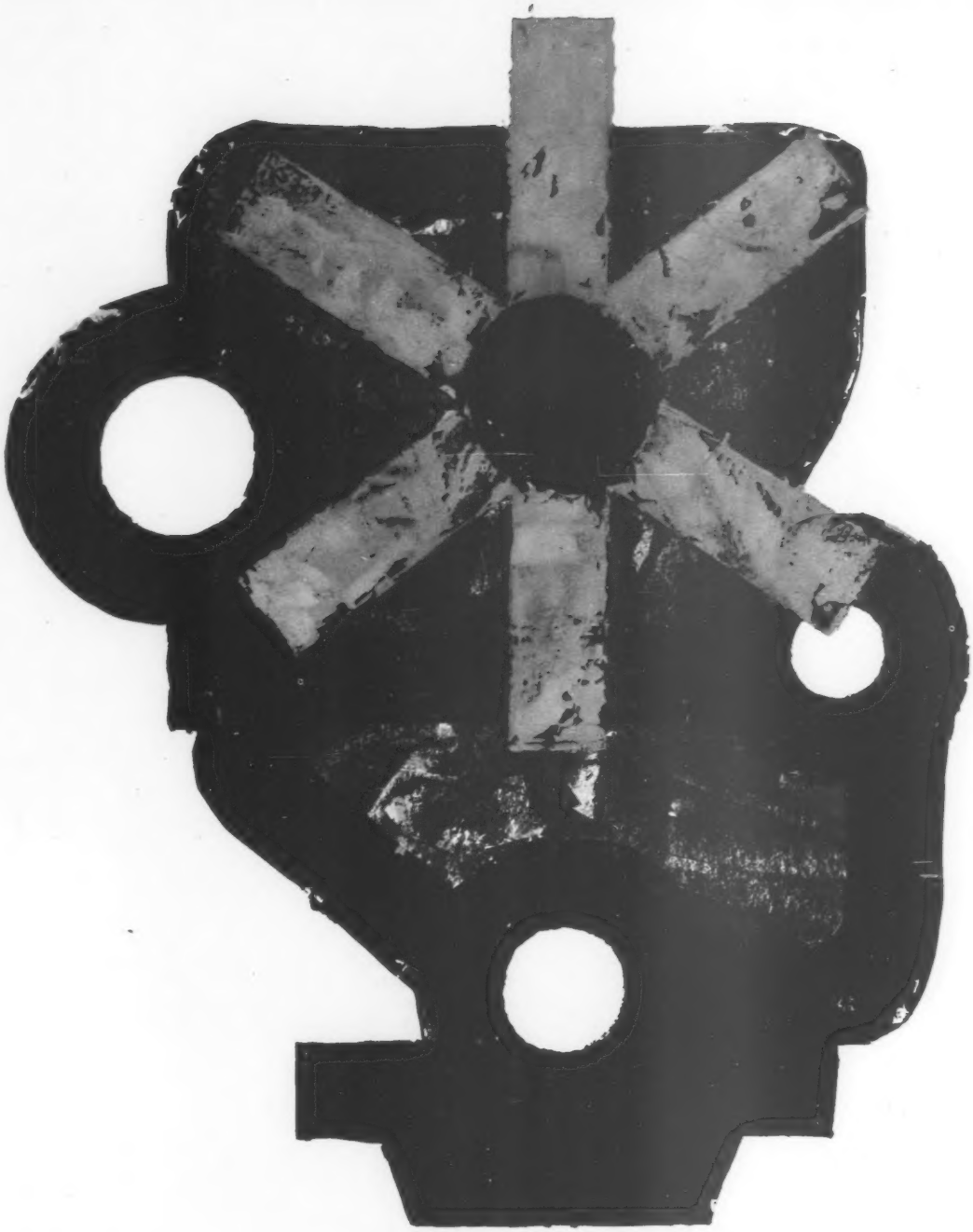
Congress has not yet determined whether this power will be developed by the federal government or by private power sources through purchase of falling water. This decision must be reached during the next session of Congress to meet the 1963 target date.

In addition to Trinity Dam, work is already under way on the 10.75 mi long Clear Creek Tunnel. Holders of the $36 million contract are a joint venture called Shea-Kaiser-Morrison composed of The Shea Co., Henry J. Kaiser Co., Morrison-Knudsen Co., Inc., Macco Corp., and Raymond Concrete Pile Co.

Next unit to get under way will be 320,000 cu yd Lewiston Dam, an afterbay for Trinity Dam. It will be bid in 1959. This dam also will serve to divert flow through the Clear Creek Tunnel.

In 1960, bids will be called for Whiskeytown Dam and for Spring Creek Tunnel. Whiskeytown Dam is a 4,143,000 cu yd earthfill structure and Spring Creek Tunnel is a 2.9 mi long 18¼ ft bore.

Powerhouses to be built include a 96,000 kw unit at Trinity Dam, a 130,000 kw unit at the outlet of Clear Creek Tunnel and a 143,000 kw unit at the outlet of Spring Creek Tunnel.



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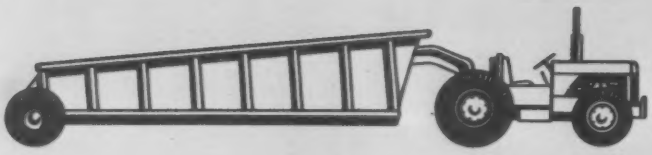
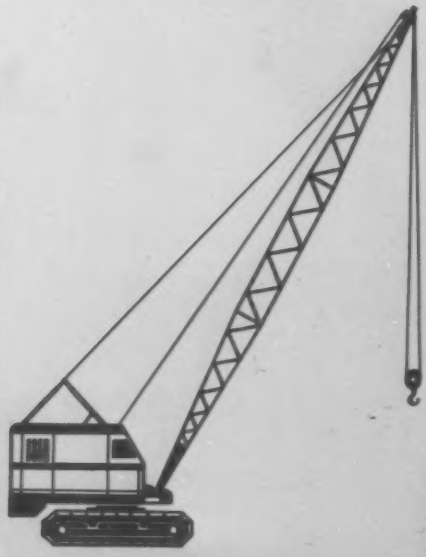


BOTTOM DUMP

Size	Autocar	Euclid	Kenworth	KW-Dart	Le Tourneau Westinghouse
16 Yds. (Struck)					C
17 Yds. (Struck)		28TDT-122W			
25 Yds. (Struck)		33LTD-132W			
35 Yds. (Struck)	AP-25T			70 BDW	
COAL HAULERS					
25 Tons		76FDT-121W			
40 Tons		33LDT-133W			
50 Tons	AP-25T			50S-BDT	
51 Tons		24TDT-128W		70S-BDT	
70 Tons			803-T		

TRACTOR-SCRAPERS

Size (cu. yds. heaped)	Clark	Euclid	I.H.	Le Tourneau Westinghouse	M-R-S	Wagner	Wooldridge	Westfall
5.7						IND-6		
9						IND-9		
10.5	110							
12						IND-14		160
13			2T55					
16		76DT-18SH						
18				C				175
19	210							
21			2T75				CW-215	
25		28TDT-36SH			125	IND-24		
26								Performer
27				B	150		CW-320	
29	310							
32		33LDT-32SH			190			
41.5					200			
48					250			

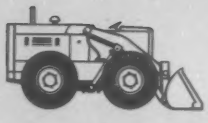


CRANES

Size (tons)	American Hoist	Baldwin Lima	Bay City	Dominion	Gar Wood	Insley	Le Tourneau Westinghouse	Link-Belt Speeder	Marion	Orton Crane	Thew
6										3E-UDT	
7.5										6E-UDT	
10										8E-UDT	
15										12E-UDT	
20		34, 25-T			75BT		C			16E-UDT	
21									35-M		
25		34-T, 34-TS, 44	600		100BT			HC-88	35-MTC	22E-UDT	
27									43-M		
30		44-T	720				B	HC-98	37-MTC		SP-530
32										26E-UDT	
35		54-T 604 703		480		WB		HC-108			MC-530 (Both MC-503 Carriers TSP-530W and Turntables)
40	595C	64							43-MTC	32E-UDT	
43									362		
45						WB					
50		64-T, 64-SC, 703-SC, 803								42E-UDT	
60				550							
70		1201, 84-T									
75									87-M		
80									93-M		
84									101-M		
85		1250									
100		1250-SC									
168									111-M		

REAR DUMP TRUCKS

Size (Tons)	Autocar	Euclid	I.H.	Kenworth	KW-Dart	Le Tourneau Westinghouse	Mack	Oshkosh	Wooldridge
10					10S				
15	AP-15	80FD			15SL		LRX		
18		94FD	PH65	801					
22		36TD 46TD				C		W-2500	
22½							LVX		
24			PH95	802					
25	AP-25				25S 25SL				CWD-214
27		66TD							
28								W-2800	
30					30SL		LRSW		
34							LRVSW		
35					35T 35SL	B			CWD-321
36				803					
40	AP-40	10FFD							
48				802-B					
50		4LLD			50T				
64				803-B					



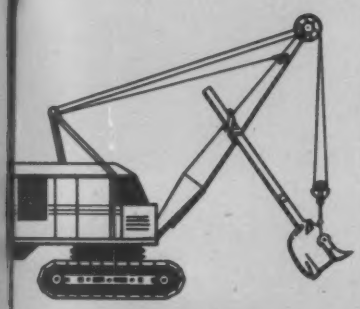
TRACTORS

Size (H.P.)	Eimco	Le Tourneau Westinghouse	M-R-S	Wagner	Westfall
110				IND-6	
130				IND-9	100
160	105-T			IND-14	
175					175
210		C			
220			125	IND-18	Performer
262			150		Performer
300				IND-24	
310			190		
335			200		Performer
600			250		

TRACTOR SHOVELS

Size (yds.)	Clark	Eimco	Frank G. Hough (IH)	Maxemobile	Pettibone-Mulliken	Thew
1½		105 (Excavator)		LD5PD	125	
1¾						ML-153
1⅞				LD7D		
2¼			H0D		175	
2½				LD7AD		
2¾	175A	105				
3½				LD8AD	250	
4	275A					
4¾				LD12AD		
6	375A			LD15AD LD12AD		

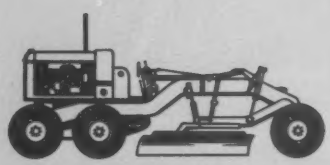
SHOVELS



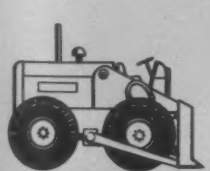
Size (yds.)	American Horst	Baldwin Lima	Bay City	Bucyrus Erie	Dominion Engr. Wks.	Insley	Koehring	Link-Belt Speeder	Manitowoc	Marion Power	Orton	Thew
½											3E-CDT	
¾	380	34						LS-88		35-M	6E-CDT	
1	500	44	60			WB		LS-98	1600	43-M	8E-CDT	
1¼		64							2000		12E-CDT	Lorain 56
1½	700	604	72	39-B	480			K-360		362	16E-CDT	
1¾		703						K-365 K-370 K-375			22E-CDT	
2		802		51-B			805		3000		26E-CDT	
2½		803			550					93-M	32E-CDT 42E-CDT	
2¾				54-B					3500			
3				71-B			1205	K-608 K-608-L	3600	101-M		
3½		1201										
4		1601		88-B					4500	111-M		
5									4500			
5½									4500			

GRADERS

SIZE (H.P.)	ADAMS	GALION	HUBER-WARCO
80	330		
100		104	
115	440		
123	550		
130		T-500 118	6-D2
135	550-T		
160	660	T-600 160	7-D2
190	660-T	T-700	



TRACTOR-DOZERS



Weight (lbs.)	Clark	Eimco	Le Tourneau Westinghouse	Wagner	Westfall
16,500					100
20,100				IND-14	
22,500					175
27,600				IND-18	
33,380	180				
34,600			C		
37,000		105 105-T			
40,000					Performer
51,300	280				
74,150	380				
104,000	480				

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Reich Brothers Manufacturing Co.

MIXERS
Barber-Greene Company
Bros Inc.
Iowa Manufacturing Co.
Pettibone-Wood Manufacturing Co.

PAVERS
Chain Belt Company (Rex)
Iowa Manufacturing Co.
Worthington Corporation

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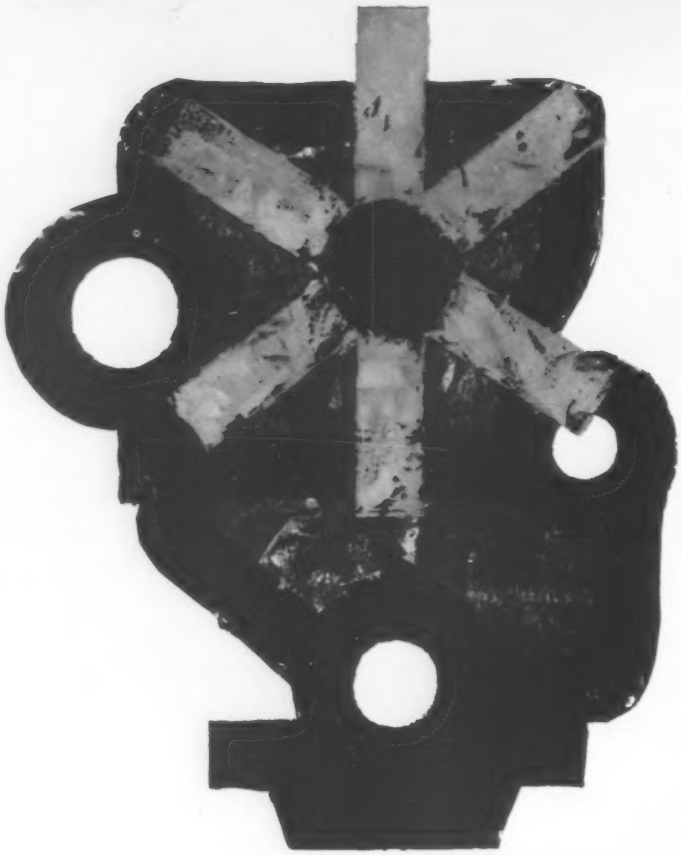

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115 h.p.	HR-4
115 h.p.	HRC-4
130 h.p.	NHC-4
130 h.p.	JN-6
130 h.p.	NT-130
160 h.p.	JS-6
160 h.p.	H-6
165 h.p.	NT-4
175 h.p.	JNS-6
175 h.p.	HR-6
175 h.p.	JT-6
180 h.p.	NT-180
180 h.p.	NH-180
190 h.p.	HRF-6

HP	Model
195 h.p.	NH-195
200 h.p.	HS-6
200 h.p.	NT-200
220 h.p.	NH-220
240 h.p.	HRS-6
250 h.p.	NT-6
262 h.p.	NTO-6
265 h.p.	L-6
290 h.p.	NHS-6
300 h.p.	NRT-6
320 h.p.	NHRS-6
320 h.p.	LR-6
335 h.p.	NRTO-6
450 h.p.	NVH-12
450 h.p.	LRT-6
600 h.p.	VT-12

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Litho in U.S.A.

. . . From belt to scraper in 20 seconds

600 fpm. To increase the belt's capacity, speed has been stepped up at least once since it was placed in operation in midJuly. And there is a prospect of further increases.

The transfer points between flights are critical points in the belt installation. Although the weathered andesite is primarily granular in nature, it has enough plasticity to be troublesome. The transfer points take the form of chutes that are aimed at keeping intact the prism formed by the material. The chutes are designed to keep the material from losing speed, and to keep it from piling up.

Chute design has been changed from square to conical to improve operating characteristics. The problem now seems to be wear of the chute material. An effort is being made to redesign the chute for quick and easy replacement of worn sections.

Now the contractor must man each transfer point to insure full operation. And material flowing down the belt is stopped from time to time to allow the transfer station men to inspect the chutes and clean them out. Eventually, the contractor hopes to make the entire belt operation remote-controlled with only an occasional patrol.

• **Fast loading**—The most dramatic and most smoothly operating part of the conveyor system is the terminal station that transfers material from the belt to 25 cu yd carrying scrapers. The machinery is set up so a single scraper can pull in, load and pull out in 20 seconds. Three scrapers can load from a single bin in a minute.

A 60 in. wide shuttle conveyor takes the material from the final conveyor flight to one of three bins. As the material spills into the bins, water is added to improve the compactive characteristics.

Total bin capacity is about 1,000 cu yd, somewhat less than an hour's belt run. Should the three bins fill, there is a bypass belt that will stack the material on one side. There it can be picked up by the carrying scrapers. However, the contractor does not believe it will be necessary to use this bypass very often.

At the bottom of each bin is a pair of roller gates operated by large sized air rams. These provide a 7 ft opening. The material falls through this gap into an automatic weighing hopper, which functions like a gravel-weighing hopper in a batch plant. The weighing hopper has another set of air-ram-operated roller gates.

When a rubber-tired carrying scraper drives under one of the bins, the operator just trips the roller gates and a 25 cu yd load is automatically discharged into his scraper. As soon as the weighing hopper is emptied, a new load is charged in to ready it for the next scraper.

Most of the scrapers are Caterpillar DW 20 units. They have been lengthened slightly, with sideboards added to increase their capacity. A few Euclid rubber-tired scrapers provide a comparison of operating characteristics.

• **Placing the fill**—Scrapers are used chiefly because they can spread the material effectively in the necessary thin layers. The specs call for each impervious fill layer to be 6 in. thick after compaction. The number of scrapers used depends on the productivity of the belt. An average of 6 units can place more than 1,000 cu yd an hour with a 2,000 ft haul from loading point down a 10% grade. As conveyor performance improves, more scrapers will be put into operation.

Standby scrapers are available at all times. If a unit breaks down, the operator can put another in action to keep pace with belt production.

The bin elevation is at about mid-height of the dam. Thus, to reach the lowest part of the dam requires a haul down a 10% grade, and to reach the top, a haul up a 10% grade. Obviously, most of the material haul will be downhill because of the shape of the impervious core. The scrapers are equipped with Hydrotarders for better control on the steep grades.

On the basis of two nine-hour shifts, production has reached as much as 25,000 cu yd a day. The two-shift operation runs from 7 to 2:30 am, permitting plenty of time for maintenance. Major overhaul is handled on Sundays, when the rest of the job is shut down.

The impervious fill is rolled by 6 ft dia sheepsfoot rollers. Fully loaded with water, they weigh 5,100 lb per linear ft. Twelve passes of these machines bring the fill up to required density. Some scarifying is necessary and some water is added on the fill to replace that lost through evaporation from the previously placed layer.

• **Other fill**—The dam has four classes of fill plus riprap protection. The impervious core will total 9 million cu yd. Flanking this is a zone of weathered rock that serves as a filter and will total 3 million cu yd.

The shell of the dam is the largest fill classification, totaling 13 million cu yd. Much of it comes from tailings and screenings left from gold-dredging operations.

The toe at each side of the dam is made of quarried rock totaling 2 million cu yd. Both faces of the dam will be protected with riprap.

(*Story continued page* 38)

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Typical **WELD-CRETE** Applications

GRANVILLE ST. BRIDGE, VANCOUVER, BRITISH COLUMBIA—One of the largest 8 lane bridges in North America. Here Weld-Crete was applied to bridge surface to bond cement dividing strips. Now, over 4 years later, bonds are as good as new. *General Contractor:* Dominion Bridge Company.

SEVEN CORNERS SHOPPING CENTER, FALLS CHURCH, VIRGINIA—During construction of this 600,000 sq. ft. structure, initially only part of floor was poured and floated to a smooth finish. Areas in which show windows would be added were poured as base slab only. Slab was coated with Weld-Crete. After store fronts were custom-built, delayed toppings of 1" to 1½" thick were poured with assurance of permanent bond to base slab. These toppings were then finished with asphalt tile, wood, or finish flooring of lessee's choice. Designed and constructed by The Kass Realty Co. of the Kass-Berger Organization under direction of J. Franklin Groff. *Concrete Contractor:* Moses-Ekco.

. . . Heavy runoff season slows work

Haul for these other fill materials is relatively short—up to three miles—and nearly level. Some of it comes from directly below the dam, where the contractor is required to excavate a powerhouse discharge channel through the gold-dredge tailings. Much of it will come from deposits in the reservoir area. And a substantial amount will be obtained by removing a huge prehistoric earthslide just downstream from the dam and above the powerhouse.

• **Early construction work**—The $49 million contract for construction of Trinity Dam was awarded early in 1957. A diversion tunnel had been built under an earlier contract. But Trinity Dam Contractors were required to line the tunnel.

To get an early start on the actual construction work, the contractor turned the river through the diversion tunnel before it was lined. This made excavation of the riverbed materials possible during the 1957 working season, and the tunnel was lined the following winter.

To reach good foundation material excavations in some areas were carried deeper than originally anticipated. This increased the planned height of the dam from 505 ft to 537½ ft. This increase makes Trinity Dam the highest earthfill dam in the world. (Pacific Power & Light's 512 ft high Swift Dam on the Lewis River in Washington is second highest.)

The contractor planned to place fill in the dam up to original riverbed level during the 1957 season. Then the river would be permitted to run over the placed fill during the winter. The deeper-than-expected excavation and a very early rainy season stopped work somewhat sooner than desired.

Before this year's work could start the river had to be diverted. But a heavy runoff season kept the contractor out of the river longer than expected. This, and a slight delay in completion of the conveyor system, has somewhat retarded the hoped-for production. The contractor had expected to put in 10 million cu yd this season. Some 5 million cu yd is necessary to make the dam safe during the winter flood period. As of August 1 slightly more than 2 million cu yd had been put in the dam. All concerned think the 5 million cu yd figure will be passed this year.

The contractor plans to bring the downstream half of the dam up to El 2050 and then follow with as much of the upstream half as possible. Specifications permit leaving dam materials on a 2½ to 1 sideslope up to El 2050. After that the various zones must be brought up together. And at this elevation the diversion tunnel is expected to handle the river flow without topping the partly built fill.

Operations in 1959 should get under way much earlier than they did this year. The contractor will not have to wait for spring floods to subside. The only requirement is weather dry enough for handling and placing the impervious fill.

The contract includes some $6 million of concrete; but this is not a bottleneck operation. It includes such things as the tunnel lining, the glory hole (morning glory or shaft type) spillway and the intake tower.

• **$49 million contract**—Trinity Dam is a project of the U.S. Bureau of Reclamation. L. B. Ackerman is project construction engineer, Howard E. McInnis is assistant project construction engineer, Gilbert G. Drake is office engineer and Marion Archibald is in direct charge of the Trinity Dam construction.

Trinity Dam Contractors, holder of the $49 million contract, is a joint venture of Guy F. Atkinson Co., M. J. Bevanda, Chas. L. Harney, Inc., Ostrander Construction Co., A. Teichert & Son, Inc., and Trepte Construction Co. A. H. Steiner is project manager, Roscoe Downs is assistant project manager, John Eilers is project engineer and Joe McNabb is general superintendent.

The conveyor system was designed by the Atkinson staff, assisted by Jacobs Associates, San Francisco consulting construction engineers.

By designing the conveyor system, the contractor was able to take competitive bids on the various parts of the equipment instead of awarding the total design, fabrication and erection to one firm. For example, the trestles, towers and bents and the belt feeders were supplied by Link Belt; the motors are General Electric; the belt material is Goodrich; brakes and roller gates were supplied by Willamette Iron & Steel Co.; the conveyor rolls were supplied by Barber Greene Co.; the crushers were supplied by Gruendler; the screens were supplied by Tyler and the tanks and other steel work were provided by Guntert and Zimmerman.

Other Conveyor News . . .

- **Use of a conveyor system has cut in half the labor required to precast concrete mats used to anchor Mississippi River banks . . . see p. 54.**
- **Erection of a 578 ft conveyor required the contractors to cut 2,000 ft of road into steep terrain before they could get equipment in . . p. 56.**

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Contractor "Rebids" 1909 Pier Contract

Result: $131,000 pier would cost more than $1.1 million to build today

When ironworkers in New York City earned 53½¢ an hour and no fringe benefits . . .

When "rolled steel work" in place cost 2.5¢ per pound and the steel specifications read, "The steel shall be made by the open hearth process, at works which have been in successful operation for at least a year . . ."

When steel was erected with stiff-legged derricks built of timber . . .

When the highest grade longleaf yellow pine was plentiful and priced at $45/Mfbm . . .

When bolt holes in heavy timbers were drilled by hand-operated auger . . .

When floating pile-drivers were equipped with cast iron or cast steel drop hammers weighing some 3,000 lb and powered by a steam hoisting engine with a coal-fired boiler . . .

When there was no city sales tax and no restrictions on the size of the pile-driving gang or on the number of men on other operations . . .

That's when the Snare & Triest Co. reconstructed Pier 72 (North River) in New York City for the Pennsylvania Tunnel and Terminal Railroad Company. The year was 1909.

The contract document for that job is a memento kept by A. W. Buttenheim, board chairman of Frederick Snare Corp. Mr. Buttenheim got it out recently when James Forgie, the famed tunnel engineer, died (ENR Aug. 21, p. 28). Mr. Forgie had signed the contract.

Frederick Snare Corp. estimators have "rebid" the 1909 job with the 1958 prices shown here. The original contract was for $131,077.50. Today's bid would be $1,173,696, up 795%. (The ENR Construction Cost Index is up 751% for the same period.)

Here are the wages, then and now, indexed to show the increased cost to the contractor:

Trade	Rates per Hour				Index Cost to Contractor
		1958			
	1909 Total	Basic Pay	Fringe Benefit	Total	(1909 = 100)
Dock builders	$0.555	$4.10	$0.33	$4.43	800
Iron workers	0.535	4.30	0.36	4.66	872
Hoisting engineers	0.610	4.35	0.35	4.70	770
Common labor	0.310 CIA	3.00	0.24	3.24	1,044
	0.220 CIB				1,470

Those labor costs show a rise from 670 to 1,370%.

The schedules in columns below show how unit prices have risen. Note how mechanization has held bolt hole drilling costs to a rise of only 50% in 50 years. Compare that to the 1,520% rise in yellow pine, in place. (And the present price would be for a lower grade, at that.)

Snare & Triest started business in 1900 in New Jersey, moved to New York in 1902 and, in 1921, changed its name to Frederick Snare Corp. Mr. Buttenheim has been with the corporation since 1900.

Schedule No. 1

For materials embraced in the work of reconstructing Pier 72 up to and including the decking, including all labor required thereon.

	Unit	Quantity	Unit Prices 6-28-09	Unit Prices 9-8-58	Index 1909 = 100
Rolled steel work: girders, beams, plates, etc.	lb	1,800,000	$0.025	$0.165	660
Cast iron: beam seats, mooring posts, etc.	lb	4,500	0.03	0.40	1,333
Galv steel cables, ⅜"	lf	250	0.20	0.50	250
Zinc pile caps	ea	28	2.00	7.00	350
Oak piles	ea	64	20.00	140.00	700
Yellow pine piles	ea	1,277	21.78	180.00	828
Yellow pine prime timber, measured in work, creosoted	Mfbm	653	57.386	760.00	1,328
Yellow pine merchantable timber, measured in work, uncreosoted	Mfbm	207	41.35	670.00	1,620
Drilling holes for anchor bolts in bulkhead wall	lf	34	1.00	1.50	150
Steel anchor bolts in bulkhead wall, 1"	lb	100	0.04	0.30	750
Levelling bulkhead wall to receive CI beam seats	ea	17	5.00	25.00	500

Schedule No. 2

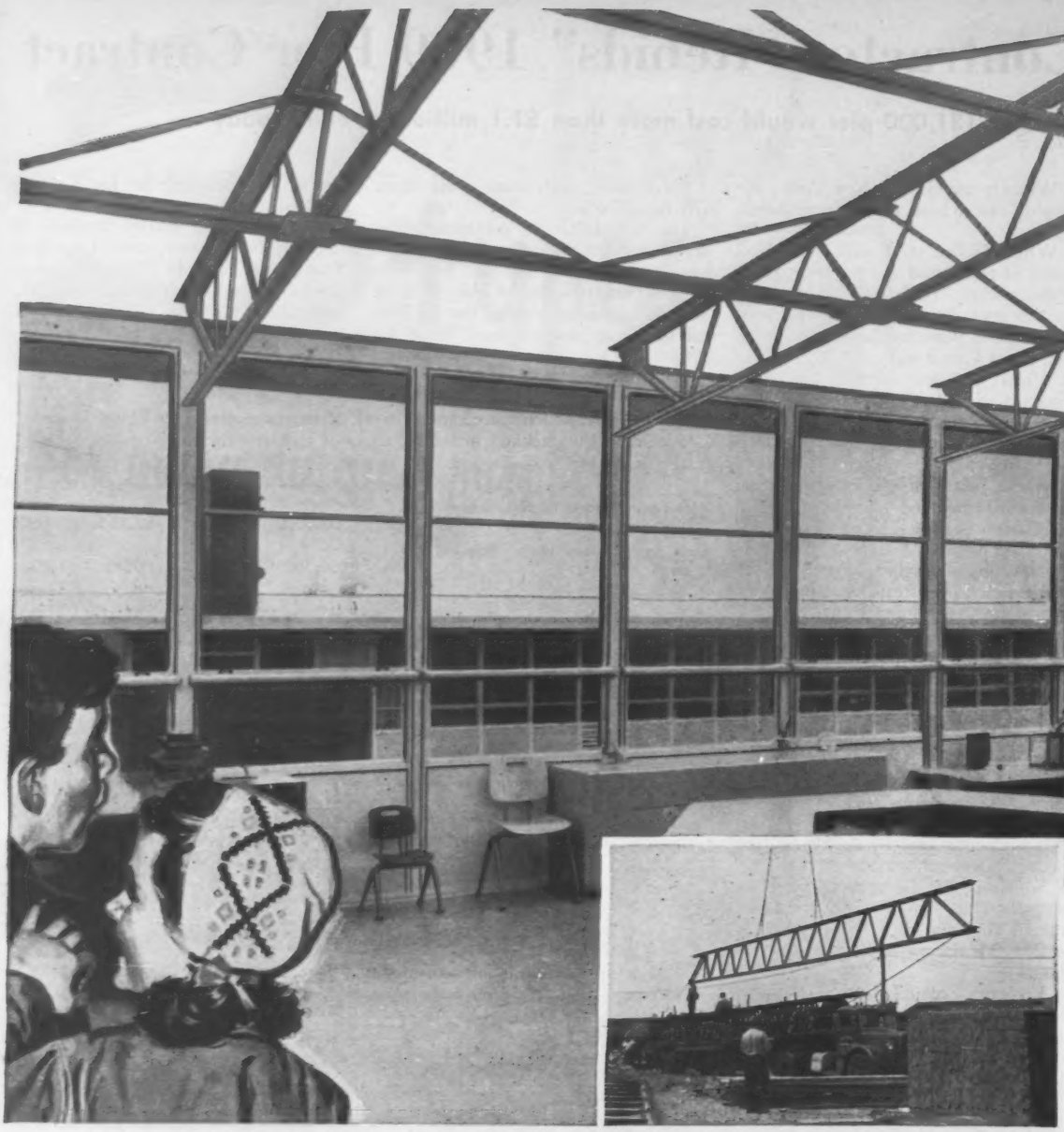
For furnishing labor and material for lagging and half-lagging piles. *(Note:—The furnishing and driving of the piles themselves are included in Schedule No. 1)*

	Unit	Quantity	Unit Prices 6-28-09	Unit Prices 9-8-58	Index 1909 = 100
Yellow pine merchantable timber lagging on fully lagged pile	Mfbm	0.3	$49.333	$600.00	1,216
Yellow pine merchantable timber lagging on half lagged pile	Mfbm	0.15	51.666	660.00	1,276
Total contract, Schedules 1 & 2			$131,078	$1,173,696	895
ENR Construction Cost Index			90.92	773.47	851

Schedule No. 3 (Extra work)

For materials in the completed work, including all labor required thereon:

	Unit Prices 6-28-09	Unit Prices 9-8-58	Index 1909 = 100
Rolled steel work, girders, beams, plates, etc.	$0.025	$0.165	660
Cast iron	0.03	0.40	1,333
Oak piles	20.00	140.00	700
Yellow pine piles	21.00	180.00	857
Oak timber, prime	60.00	620.00	1,034
Yellow pine timber, prime	45.00	700.00	1,555
Spruce timber, prime	45.00	550.00	1,221
Steel rods, bolts, spikes, washers, etc.	0.03	0.25	833



Vision-Vent® Window Walls of the type shown here are the key to Truscon's low-cost school design. Vision-Vent goes up like other curtain-wall systems—fast and easily. And, it offers this important plus—it's a complete wall with window already in place, completely contained within the depth of the window-framing members. Insulated panel can be in color. Choice of double-hung or projected steel windows. The Truscon design system is based upon a 9-foot module consisting of twin Vision-Vent units with mullion.

In the Truscon design concept, roof of the single-story building is supported by Truscon Clerespan® Steel Joists integrated into the 9-foot module. Clerespan steel joists reduce construction time because they are light, long, easy to handle. They are designed to meet all types of loading conditions. Open web allows passage for ducts, pipes, electrical conduit, as needed. Joists can be left exposed and painted, or an acoustical ceiling can be suspended.

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Class A, fire-safe construction. Simplified construction methods and modular design provide a permanent, high quality school building that will be an asset to your community. This is Class A construction. Materials are fire-safe. And, because all these Truscon products are *steel,* they are strong, long-lasting, safe. Original building dollars go farther, serving your community for years.

Expand as needed. This type of construction has been planned with insulated end walls which can be removed. This means that additional space can be added, and the end wall re-used. Additions can be made rapidly, easily, and in perfect architectural harmony. Your best protection against early obsolescence is provision for easy expansion.

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Convention hall assumes mushroom appearance when . . .

Steel-Framed Dome Overhangs Supports

Las Vegas may soon become the Atlantic City of the West. A $6 million convention center nearing completion will make this possible.

The center features a 7,500-seat assembly hall topped by a 312 ft dia steel dome. Diameter center-to-center of the dome's ring of supporting columns is only 267 ft. But the roof overhangs its supports to give the building a mushroomlike appearance.

Also included in the center is a 250 x 360 ft exhibit hall and many smaller meeting rooms, the largest of which is 65 x 105 ft and will seat 500 for a banquet.

Planning emphasizes flexibility. The center can accommodate groups ranging from 50 to 20,000 persons in its 1,000 ft long complex of meeting rooms, arena and exhibit hall. Auxiliary facilities include storage areas, concession booths, convention center offices, ticket offices and a cocktail lounge.

Las Vegas has established a remarkable reputation as a resort center in the last 10 years. It now has nearly 15,000 hotel and motel rooms. The area gets a tremendous tourist play. Yet there are times—particularly in the middle of the week—when occupancy rate is fairly low.

Weak spot in the whole picture was lack of meeting rooms for conventions. The new convention center solves the problem. The facility will not open until next February, but it is already booked solidly for the next three years.

The $6 million program is financed by a small tax on room rentals. This brings in about $100,000 a month, which is adequate to underwrite a sizable bond issue.

• **Steel truss dome**—The arena roof is supported by 16 steel trusses that extend from a 19 ft 4 in. dia center compression ring to 14 WF 87 perimeter columns (except that columns on each side of the arena—where the exhibit hall connects—are 127 lb members).

The 6 ft deep steel trusses are slightly arched to fit the curvature of the roof. Their upper and lower chords are made of pairs of 8 x 6 in. angles. Smaller angles form the web members. Small trusses brace the arch-rib trusses at about the quarter points.

The compression ring, which distributes thrust from the trusses, is composed of 12 WF 65 members and an exterior ring made of 30 WF 108 beams bent to circular shape.

Most complicated connections are at the places where the arched trusses frame into the supporting columns and a tension ring made of 14 WF 176 beams. These beams are positioned on edge so that the web is horizontal.

The ring resists outward thrust of the arched trusses. To give it added strength, cover plates 16 in. wide by ¾ in. thick are welded top and bottom to the steel beam.

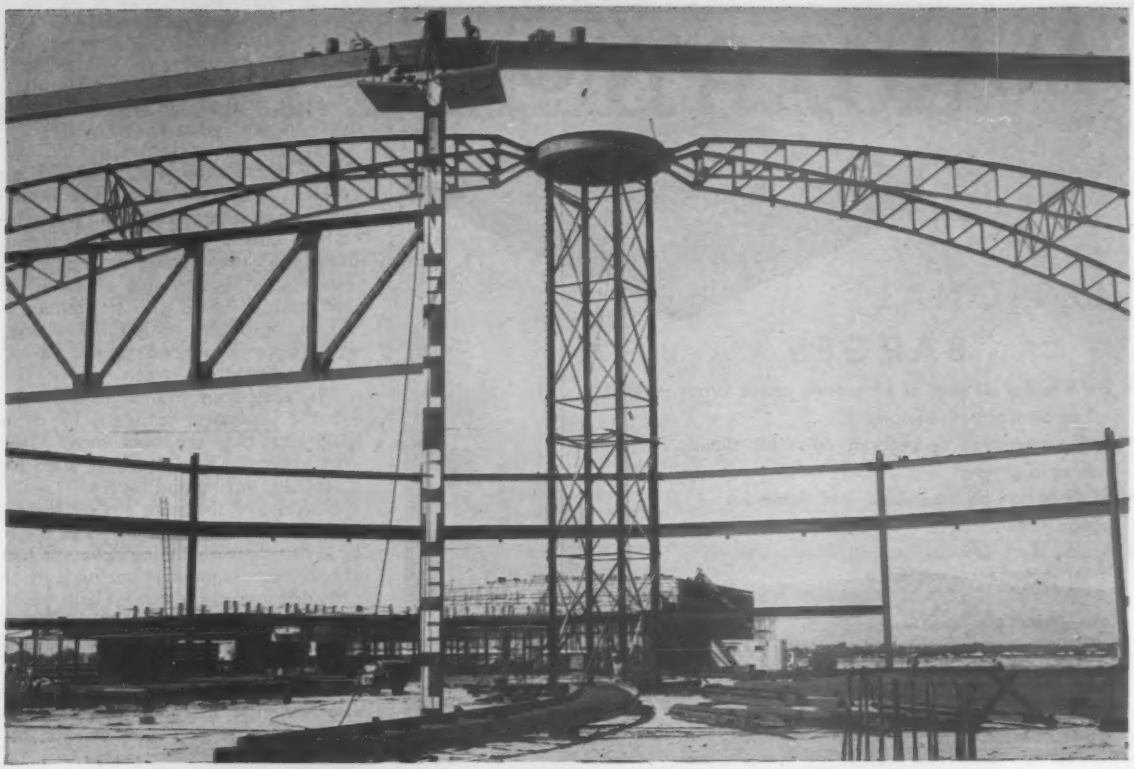
The connection is further complicated by the need for also serving as an anchor for a pair of diagonal facing rods. It is riveted with 1⅛ in. rivets.

Permanent seating for 4,500 is provided in the balcony of the arena on concrete slab risers supported on inclined steel beams. The risers are 3 ft wide and provide a 1½ ft rise between rows of seats. Slabs are 4 in. thick and risers 6 in. thick. In a typical section there are 17 riser levels. Main support for the seats is provided at the perimeter column location by 36 WF 160 beams spanning between columns.

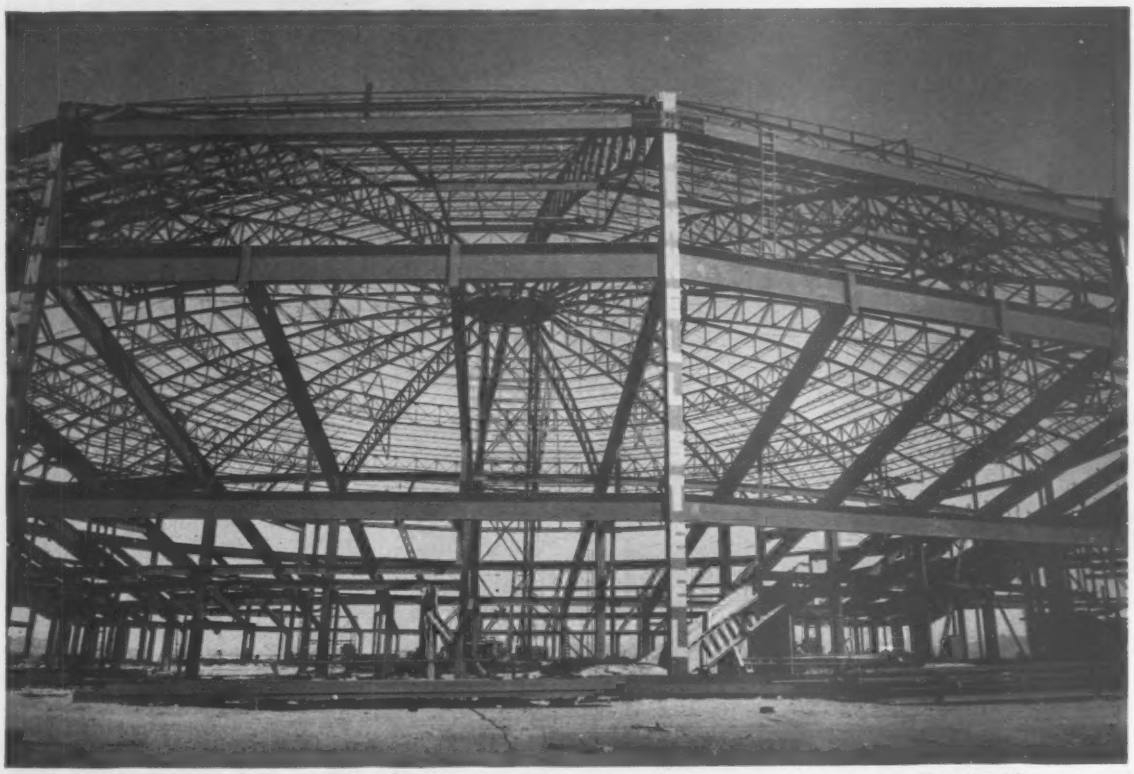
• **Mushroom shapes**—The roof's overhang is triangular in vertical section, its steel supporting members framed into the rest of the building. The overhang provides room for a walkway behind the seats and for such facilities as a press box and projection room.

The dome roof is covered with aluminum sheets with 4 in. ribbed rectangular corrugations. The sheets were furnished in 20 ft lengths and laid in an 8 in. end lap. Side lap is two corrugations. The material is riveted to the steel building frame. The steel is painted with bituminous paint for electrolytic separation. The sheets are laid radially and parallel in equal spherical segments joined on 16 radial lines over the main steel trusses. All roof and roof sealing materials are aluminum colored.

The huge circular assembly hall has a hung ceiling that is insulated and has acoustical treatment. The hung ceiling permits covering the dome with the relatively inexpensive aluminum roofing. It also cuts by about one-half the

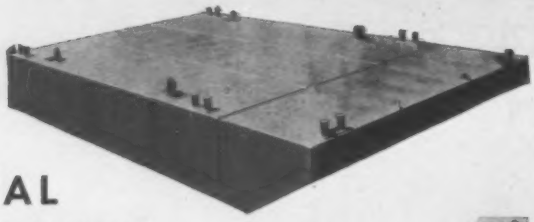


Temporary tower carries the compression ring, which will support the dome's arched trusses.



Exterior column supports at top both the dome tension ring and an arched truss—a complex detail.

MANITOWOC



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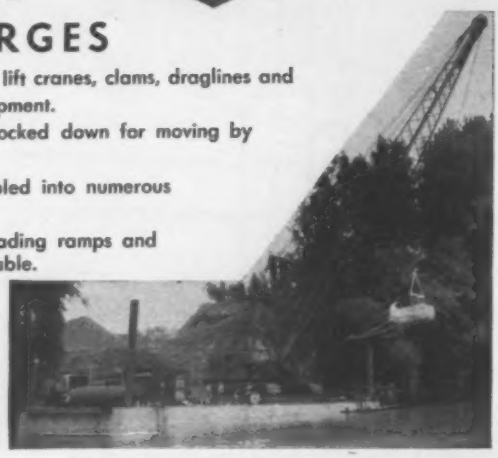

Photographs illustrating a few of the many successful operations using Manitowoc Sectional Barges. Economy and flexibility are outstanding features.

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The Manitowoc Porta-Float is the smaller version of the sectional barge. The standard basic float is 32' x 8' x 4'. Units can be pinned together to make a wide variety of sizes and arrangements. Economical and versatile for floating all types of contractors' equipment. Ideal for floating docks, piers, etc. Porta-Floats are easily transported on trucks as illustrated below.

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MANITOWOC SHIPBUILDING INC.

MANITOWOC, WISCONSIN

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. . . Convention Hall

volume for heating or air conditioning; helps the carefully planned acoustical treatment; covers the air conditioning ductwork and other in-ceiling items.

Exposed steel columns on the outside of the mushroom-shaped dome are covered with fireproofing. The insulation is shaped in a pylon form for architectural effect. Except for the aluminum roof, the outside of the mushroomlike dome is painted a pale desert sand color to blend with the terrain.

Exterior of the exhibit hall is clad with factory-enameled metal panels. Color is desert gray green.

The clear floor area of the arena inside the permanent seating is 154 ft in diameter. This can hold some 3,000 portable seats. It also can be used for basketball, boxing and rodeos.

The end of the arena toward the exhibit hall has an opening about 74 ft wide covered with sliding doors. When this is open, temporary seating can be extended toward the exhibit hall.

The exhibit hall is a 360 x 250 ft steel-frame building. It can be separated into two areas for separate use by soundproof movable doors. These doors also minimize the area that needs air conditioning if only one part of the exhibit hall is needed.

Although the convention facility has large areas for concessionaires, there are no cooking facilities. It is expected that meals would be delivered by one of the Las Vegas hotels.

All of the areas will be air conditioned. And installations are being made for closed circuit television should that prove desirable.

The Las Vegas center is a project of Clark County, Nev., Fair and Recreation Board. Architect on the project is Adrian Wilson & Associates of Los Angeles. Brandow & Johnston, also of Los Angeles, is structural engineer.

General contractor is Lembke Construction Co. of Nevada. Steel fabrication is by Vinnell Steel of Los Angeles, with erection by Taylar Steel of Las Vegas.

Culvert Pipe Economical For Test Cell Construction

Culvert pipe, 24 ft in diameter, has saved both time and money in construction of test cells for turbo prop engines at General Electric's Lynn, Mass., plant. The corrugated steel pipe, largest ever fabricated, serves as a permanent enclosure for the cells. GE says it saved $700,000 and two month's construction time by using the outsized pipe. Total cost of two test cells and a control room building was $1.02 million. The cells are 120 ft long over-all with 15 ft of acoustic baffling inside each end.

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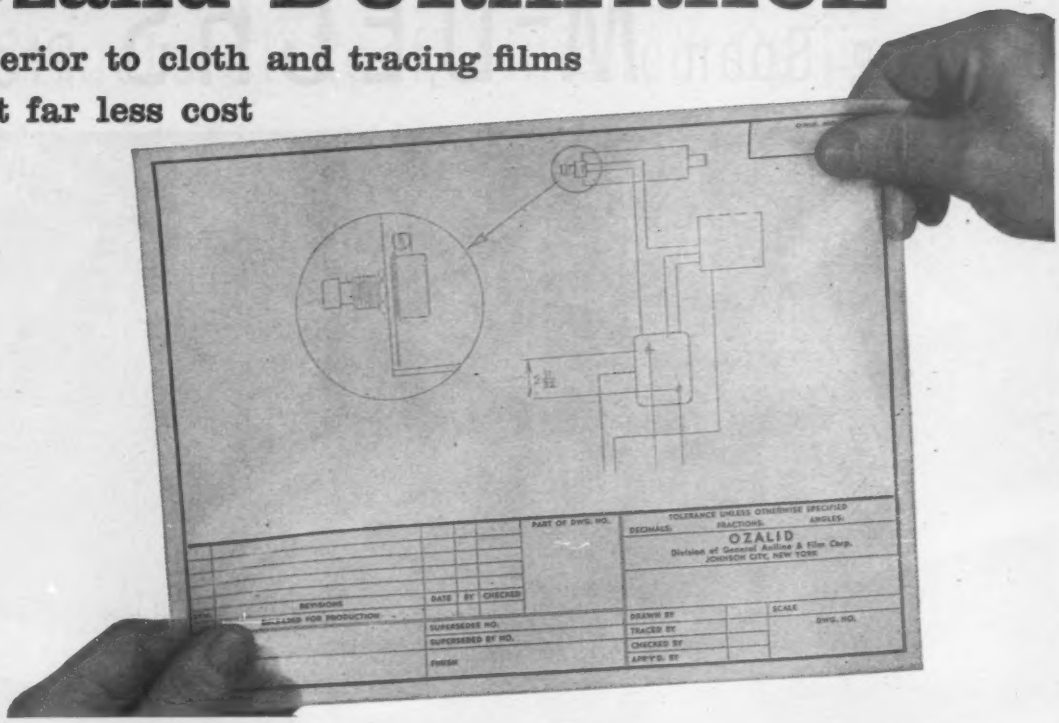

Extremely durable, practically ageless—that's new Ozalid Duratrace drafting film. Duratrace speeds drafting operations, insures greater accuracy and finer prints. Its base is MYLAR* polyester film—the toughest film ever made. It can be used under all climatic conditions and will still maintain its exceptionally high-dimensional stability.

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- **Gives you better prints, faster**

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M-DECK SECTIONS

SECTION M1-OB
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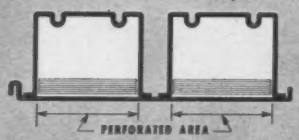
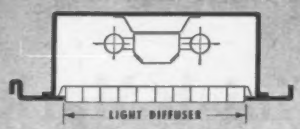
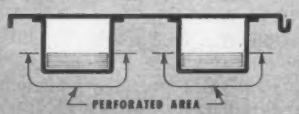


SECTION M2SR (Acoustical)
CEL-BEAM DEPTH 3", 4½", 6" or 7½"



SECTION M1T (Troffer)
DEPTH 6" or 7½"



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At Left: Cross Section of Long Span M-Deck Combined Roof-Ceiling with Troffer Lighting.

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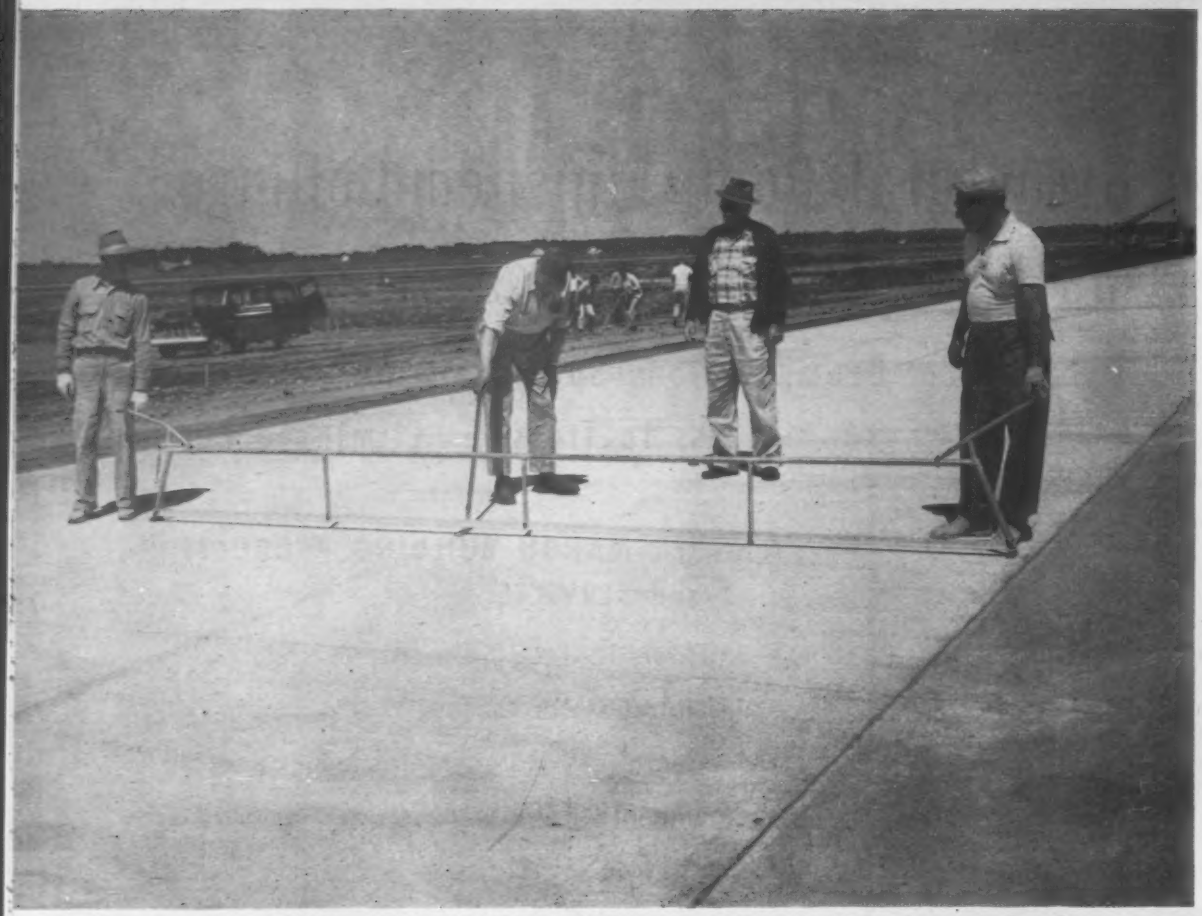

Rigid jet runway specifications allow only ⅛ in. deviation in grade each 16 ft. of running length . . .

Sound Compaction, Smooth Finish Mark

Jet plane requirements are a real test for the paving contractor.

Putting down runways durable enough to hold up under the battering of B-52 bomber wheels and smooth enough to insure trouble-free landings and take-offs is the construction goal at Griffis Air Force Base, Rome, N. Y.

Some 11,000 ft of concrete runway must be put down under the Corps of Engineer's rigid specifications. These allow only ¼ in. deviation in grade per 16 ft. of running length. Such close tolerances demand special care in paving. In highway work, ½ in. in 10 ft would be a high standard.

The paving job is moving along at the rate of 2,800 linear feet per 10 hr period, with the contractor using as many as three pavers. This is regarded as an excellent production rate, considering the specified smoothness tolerance.

Automatic batching plants carry out the dry batching operations. The concrete is manufactured from crushed gravel aggregate to produce a high compressive strength of about 5,500 psi at 90 days. A 5½ bag mix is used with a vinyl resin type air entrainment agent (from 4 to 7% of the total) that gives better resistance to freezing with only a slight loss in strength. Specifications call for maximum 2 in. slump and a minimum of 725 psi flexural strength at 90 days.

Aggregates are limestones—for higher strength concrete. Subrounded gravel and crushed gravel of very good grade make up the mixture.

Concrete aggregate specifications are: 100% passing the 2½ in. sieve; 95 to 100% passing the 2 in. sieve; 35 to 70% passing the 1½ in. sieve; and 0 to 15% passing the 1 in. mesh.

Sizes for the sands are: 100% passing the 1½ in. mesh; 95 to 100% passing the 1 in.; 26 to 60% passing the ½ in.; 0 to 10% passing the No. 4 and 0 to 5% passing the No. 8 mesh.

The runway will be 11,820 x 300 ft with 14 in. thick pavement. Included in this stretch are two 1,000 ft end strips of 17 in. pavement to handle heavier wheel loads. At each end are two 1,000 ft overruns. Their first 150 ft are of 2 in. thick hot mix bituminous concrete. Remainder is double-surface treatment, 6 in. dry bound Macadam. The first section, which will act as a blast pad, needs a better binding to keep loose material from scattering and damaging the jet engines.

Spaced at 25 ft intervals are concrete joints made with a vibrating bar that creates weakened planes. The joints are cut with a diamond saw. Longitudinal joints are 1 in. deep and taper ⅜ in. at top to ⅛ in. at bottom.

. . . this means a lot of testing.

Vibrating rollers in tandem give more efficient compaction of base course . . .

Float finishers shave the runways to final close tolerances.

B-52 Runway

A total of 295,000 cu yds of concrete has been poured in the past year, and thus far only three random cracks have been observed. Joints are rubberized and filled with a jet-seal compound. Transverse joints are sawed to a depth of ¼ the pavement thickness. Standard concrete dowel joints are used at the longitudinal joints.

Generally, a 1½% grade tapers toward the pavement center for drainage purposes. A series of 6 in. porous pipes are used throughout the job for both longitudinal and transverse drainage. Then the natural drainage line is followed as much as possible. Reinforced concrete pipe, from 24 to 108 in., collects the run-off.

Frost susceptibility could be a problem because soils in the area are fine sand or silts. Therefore, careful tests must continue during the job to insure that soil meets standards for frost susceptibility. Whenever more than 4% of tested material gets by the 200 mesh sieve, a hydrometer test is performed to make certain no more than 3% of the total amount passes the 0.02 mm size.

Plate bearing to determine the soil's loadbearing capacities found that over 600 plus K values would assure compact select base courses. Samples of gravel and soil were taken within a 100 mile radius. The minimum specified 400 K modulus of sub-grade reactions was exceeded in all samples.

Compaction of the base course was done with 5 vibratory compactors—all of them three-wheel vibratory rollers. A surface crusher handled the base course material, removing everything bigger than 3 in. from both aggregate and base courses. Minimum compaction standards were 100% of modified AASHO density for sub-grades, sub-bases and base courses in cohesionless sands.

Select material specifications are: 100% must pass the 3 in. sieve; 65 to 90% the ¾ in.; 30 to 0% the No. 4 mesh; 0 to 8% the 200 mesh screen and not more than 3% the 0.02 mm size.

Col. T. DeF. Rogers, Corps of Engineers, U.S. Army Engineer District, New York, is in over-all charge of the construction operation.

Lt. Col. J. R. Hershey is the engineer at the jobsite. Norman Clark is the resident engineer doing most of the construction operations. The contracts, held by several contractors, give George M. Brewster & Son, Inc., of Bogota, N. J., the lion's share of the earthwork and paving jobs.

The new runway is necessary to accommodate heavier jet aircraft, particularly bombers. With this increased capacity, Griffiss will become one of the SAC chain of air bases.

Profits Go Up On Every Job

With fabricated I-beam frame for rugged durability and top load-carrying strength on roughest possible terrain.

With 88" of inside width and a complete range of body and chassis lengths to provide the loading capacity you need.

A MORE RUGGED, LOW COST Dump Trailer than the new Fruehauf "Toughy" has never been built for profit-conscious, cost-conscious roadbuilders!

Its bridge-type fabricated steel I-beam chassis frame construction is your assurance of durable and constant service under maximum payloads on all kinds of terrain. Extra years of performance are actually *built-in* the Toughy—and that adds up to extra dollars of earnings for you.

Tandem and single axle units in a broad range of body and chassis lengths are available to suit your weight distribution requirements. Capacities range from 8 to 26 cubic yards. In the longer tandem axle unit, bridge formula design can be applied to provide you with maximum legal capacities. Low or high sides can be chosen—inside width is 88" in either case. Wide front coupler and no-hop P2 tandem are exclusive Fruehauf features.

There isn't a tougher, more durable, more profitable hoist-type Dump Trailer built today. Compare with the Toughy before you buy!

For Forty-Four Years—More Fruehauf Trailers On The Road Than Any Other Make

FRUEHAUF BUILDS AMERICA'S BIGGEST LINE OF DUMP TRAILERS, PLATFORMS, CARRYALLS, AND BULK TANKS FOR THE ROADBUILDING INDUSTRY.

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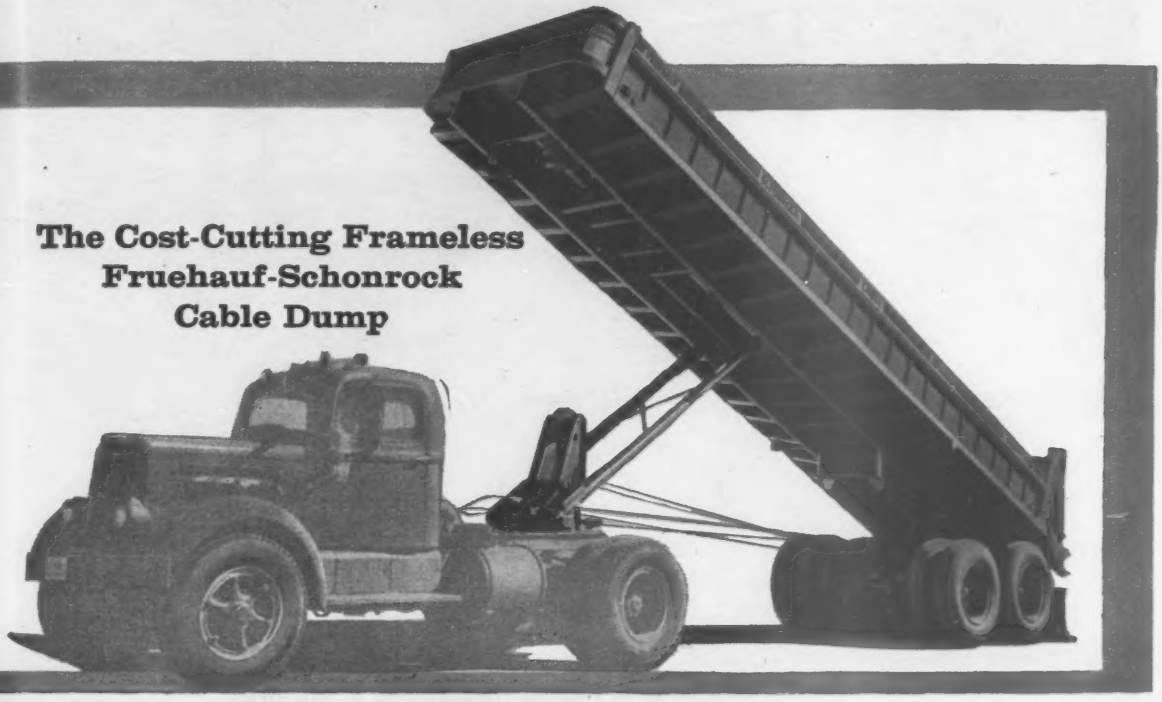

The Cost-Cutting Frameless Fruehauf-Schonrock Cable Dump

With redesigned booster fifth wheel for faster dumping with less strain on truck and cable than ever before.

With redesigned body frame for greater strength and increased "flex" in center beam to absorb even the greatest shock loads.

STILL THE MOST ECONOMICAL Dump Trailer in America to purchase or maintain, the simply-designed, ruggedly-built, frameless Fruehauf-Schonrock Cable Dump now has more cost-cutting, time-saving features than ever!

Faster dumping with less strain on truck and cable is achieved by new, longer booster arms and larger rollers. Higher stockpiles are provided by newly-designed offset tailgate hinges, which swing the gate quickly out high and clear of the pile. Shock loads of all kinds are more easily absorbed by the tougher, more flexible body frame.

The cost of this revolutionary cable unit still remains lower than that of most competitive hoist units with or without full chassis frames. Payloads are still up to 4,000 lbs. greater because of the frameless design and bridge formula application. All wheels stay fully grounded throughout dumping, and the cables can be used to get either truck or Trailer out of mud or holes.

No other dump of any kind does so much work for so little cost!

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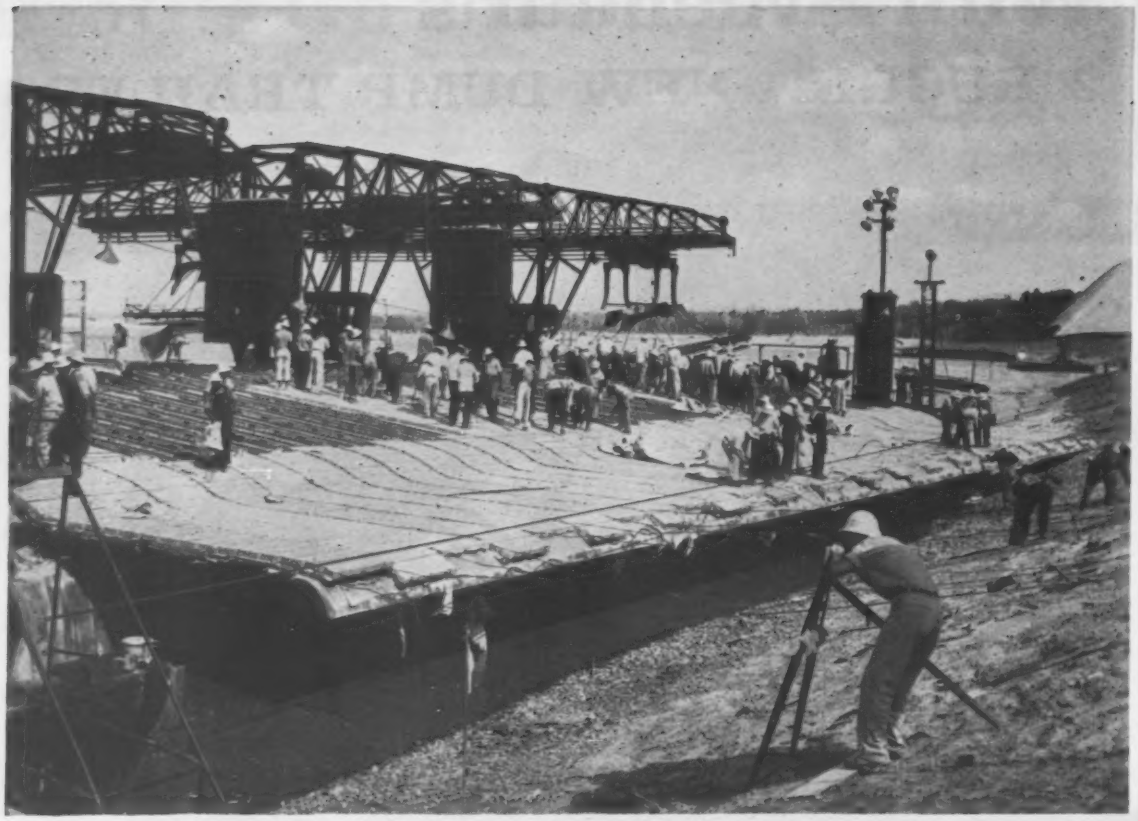


Jointed concrete mattresses slip over side of barge to stabilize sloping banks of Mississippi.

Conveyors Spur Mat Precasting

A new method of mass producing the concrete mats used to anchor the Mississippi River's banks cuts precasting labor in half.

The Corps of Engineers' Vicksburg District had been casting linked mats in lengthy runs on casting fields more than a mile long. Now, a continuous, automatic casting machine turns out 80 mats an hour with 55% less labor than before.

A new 531 ft long casting plant, located in Greenville, Miss., includes a concrete batching and mixing plant, a casting machine and a dual 28 ft wide endless-chain conveyor system. The plant also houses a curing kiln complete with heating and humidity facilities, and a bridge crane.

The articulated mats consist of 20 individual concrete blocks held together by embedded copper-clad steel wires. They are cast and cured on a Link-Belt two-level chain conveyor. Each mat is 4 ft wide, 25 ft long, 3 in. thick and weighs 3,300 lb.

Mats are cast on sheet-steel pallets, which move constantly through the plant on the conveyor at 8 fpm. Pallets are cleaned and oiled on the conveyor's upper level and wire fabric is laid on them. Molds are lowered on the pallet, filled with concrete and vibrated, and then retracted. The mats next enter the curing kiln.

At the end of the run the conveyor rotates over 12 ft dia sprockets. The mats travel back through the kiln on the lower conveyor run. Total curing time in the kiln is about 1¼ hours.

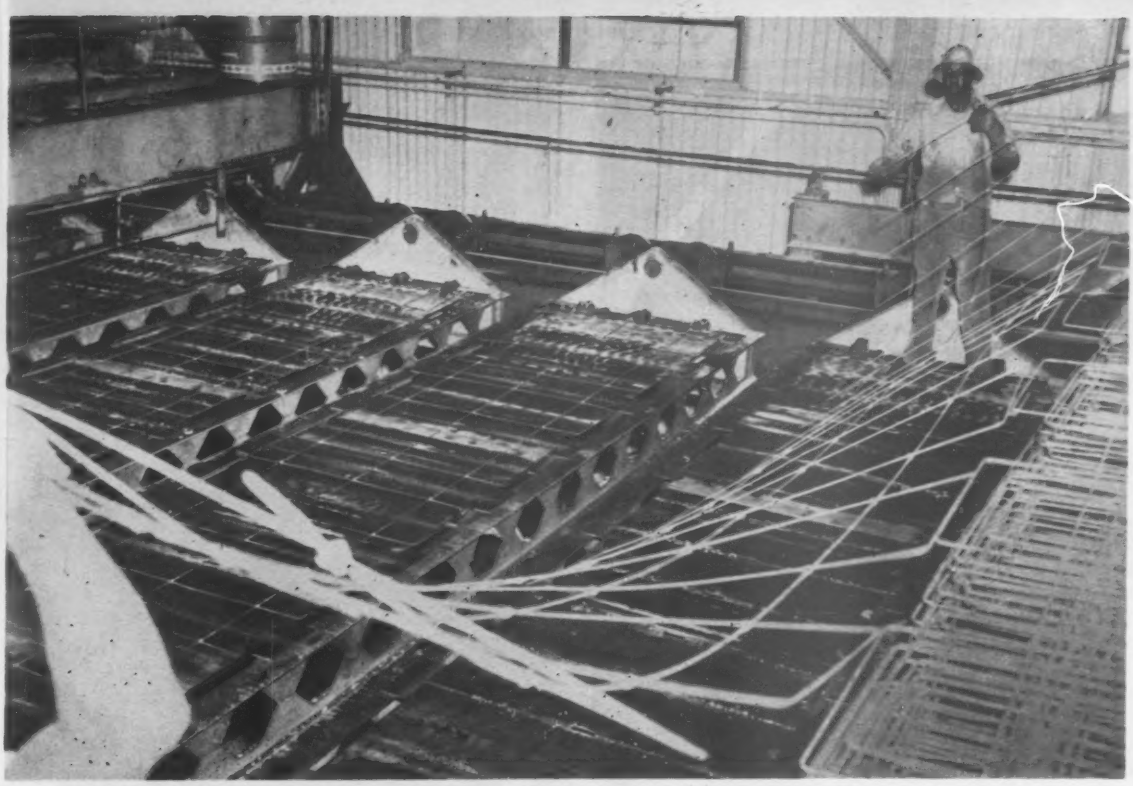
When the cycle is completed, a bridge crane picks up the mats with air-actuated grippers and stacks them on flat tram cars. The whole operation is completed in approximately 1¾ hours. A motorized hauling unit then transports the mats to a large storage field for further curing.

The mats, which are laid under water, prevent erosion of the Mississippi's sloping banks. The mattresses are placed from a floating "factory" called a sinking plant. The mats are tied together and attached to launching cables fixed on shore, then dropped onto the banks as the plant moves into the river. After complete mattresses, 400 ft by 140 ft, are sunk the upper bank is paved with asphalt. The river has a history of changing its course by eating away its banks (ENR Sept. 8, 1955, p. 25).

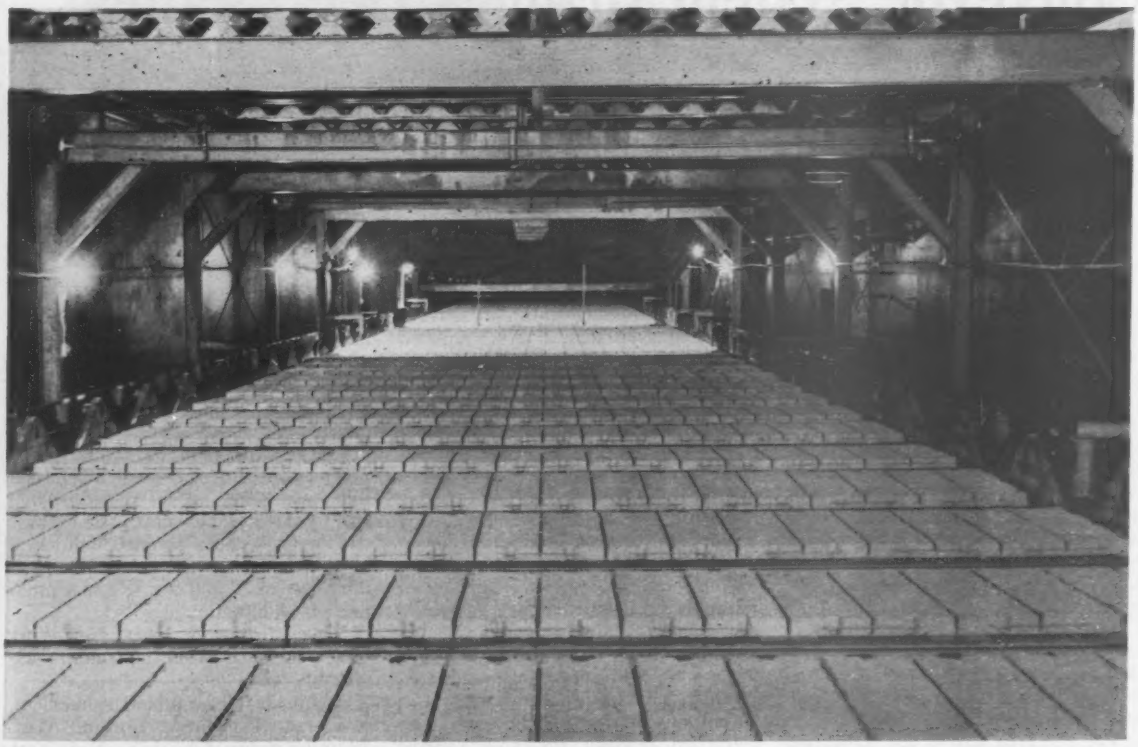
It had been predicted that if nothing were done to stem this change, the river would alter its course completely by 1965 and leave New Orleans high and dry (ENR March 18, 1954, p. 26).

Through the years, mattresses of willow brush, logs, and solid concrete blocks have been tried and discarded in favor of steel-laced articulated concrete.

(*Field and Office continued page 56*)



Steel wire fabric is placed on conveyor-borne pallets prior to casting of concrete mats.



Mats enter kiln for 1½ hours of curing at the end of the production line.

Conveyor System Bridges Deep Valley

Contractors had to cut more than 2,000 feet of road into steep, sloping terrain to bring in heavy equipment needed to erect a 578 ft conveyor system for the Medusa Cement Co., Wampum, Pa.

The project also required creating crusher units at a mountaintop limestone quarry, putting up a silo at the bottom of a 260 ft slope and building a conveyor bridge to connect the two facilities. The bridge, of truss construction, consisted of three enclosed spans —one 128 ft long and two smaller ones —and one open span.

Each span was assembled before erection. They were positioned at the site by two 50 ton cranes and a 35 ton crane, each with 90 ft booms. The two cranes, in tandem, carried the 10 ft square first span along a narrow road to the site. There, an A-frame support was secured to one end of the truss. The other end was attached to a distribution silo.

The second span, a 26 ton, 104 ft long truss, was to cross a railroad right-of-way. The unit was completely erected in 2½ hours in compliance with the railroad's clearance time.

The conveyor system was completed in four working days. It was then enclosed in asbestos cement siding to protect it and to prevent spillage. More than 500 tons of crushed limestone are transported each hour on the 30 in. conveyor belt.

Osborn Engineering Co., Cleveland, Ohio, was the engineer. Mellon-Stuart Co., Pittsburgh, Pa., was the contractor. The Barber-Green Co., Aurora, Ill., fabricated the conveyor.

Church's Ducts at Angel Height

Outlets located 100 ft above the floor are the outstanding feature of an air-conditioning installation just completed for the 30-year-old Riverside Church, New York City.

The installation is part of modernization program and an eight-story addition to the church. The unusual height resulted from efforts to cut costs by utilizing the ducts of an existing natural-air circulation system.

The old system supplied unconditioned air to the nave through floor openings under the pews. It exhausted warm air through seven openings in the tile arches forming the 100 ft high ceiling. The new system uses the same floor and ceiling openings and substantially the same ductwork. However, air will be discharged at the ceiling and exhausted through the floor existing openings.

The major design problem was posed by the nave's giant dimensions—100 ft height, 65 ft width, 200 ft length—a 40 ft deep balcony, a triforium. Enclosed volume is 1.3 million cu ft. An attendance of 1,960 persons is anticipated.

The system that was worked out provides an entering air temperature-difference range of 17.5F at 50,000 cfm to 25F at 35,000 cfm. The exhaust end of the system permits withdrawal of air from under the pews at a minimum rate of 29,000 cfm to a maximum rate of 44,000 cfm.

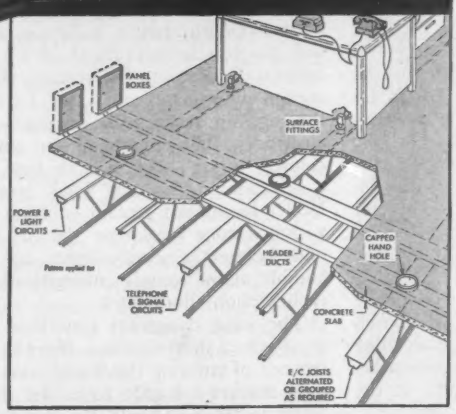
Meyer, Strong & Jones, New York City, designed the air-conditioning system.

Architects for the project are Collens, Willis & Beckonert, Boston, Mass. Vermilya-Brown Co., Inc., New York City, is the general contractor.

This open-web steel joist carries two loads... structural and electrical

The E/C Joist is a Standard Open-Web Steel Joist with an electrical raceway substituted for the conventional top chord. Each E/C Joist has the same load-carrying capacity as a comparable standard joist, and the same load table applies. Patents applied for.

APPROVED BY U.L. Ceco E/C Joists are listed by the Underwriters' Laboratories for use with electrical header ducts and accessories manufactured by General Electric, National Electric Products Corporation and Walker Brothers.



Electrical, telephone and signal wires can be run from the panel boxes down through the header ducts, into the top chord of the E/C Joist and up through the surface fittings to desks located anywhere on the floor. Whenever desks are moved, surface fittings can be placed along the joists to service the new positions.

Now you can provide Underfloor Electrification Raceways for only 50¢ a square foot—half the cost of the next most economical quality system

As everyone knows, Standard Open-Web Steel Joists carry the structural load with utmost economy. And now, for as little as 50¢ a square foot more, Ceco's *Electro-Channel* Open-Web Steel Joists carry the electrical load, too. Cost is half of the next most economical quality system. Included with the Ceco system are header ducts, hand-holes and markers, installed—as well as the E/C Joist integral raceways. The 50¢ buys a two-duct system on 6′ 0″ centers. Comparable savings are offered in three-duct systems. Call your Ceco engineer or send coupon for manual. Ceco Steel Products Corporation. Sales offices, warehouses and fabricating plants in principal cities. General offices: 5601 West 26th Street, Chicago 50, Illinois.

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Tragic 1953 train wreck spurred New Zealand Railroad's search for foolproof, flash-flood alarm.

Rising Water Completes Circuit, Sounds

Acid water has its disadvantages sometimes, but the low pH value of New Zealand's Whangaehu River is the key to an unusual flood-warning system. Acidity improves water's electrical conductivity, and the Whangaehu warning setup depends on rising flood water to complete an alarm circuit (ENR Sept. 25, p. 65).

The Whangaehu demonstrated its deadly capabilities with a flash flood in 1953. It washed out Tangiwai Bridge without warning just ahead of an oncoming train. The train plunged into the river and 151 persons were killed. The tragedy prompted efforts to find an adequate warning system.

A number of systems were investigated and found ineffective, some because of doubt about their performance under unpredictable flood conditions. Then it was discovered that Whangaehu water upstream from the Tangiwai site is highly acidic. This set the designers on the path to the present warning system.

At the flood detection site, 8 miles upstream from the Tangiwai Bridge and some 6½ miles from Waiouru station, where the control equipment is installed, a 20 ft concrete pylon was constructed in the river bed. On the downstream side of the pylon are pairs of electrodes at one-foot vertical intervals. Electrodes are lead domes set in insulated rings. They are recessed in the pylon wall to prevent damage from floating debris.

Connections inside the pylon divide the electrodes into five water-level-detecting zones. Depth of each zone is determined from the relationship between the height of the water at the gage and its danger to the bridge.

On the bank a small hut shelters two tamperproof cast iron cases containing remote control relays and other apparatus for the installation. A telephone also is provided. Buried polyethylene insulated cables carry the conductors.

At Waiouru station, indicators on a wall panel show water depth on a white column divided into five sections. Each section illuminates as water level at the gage site reaches the corresponding electrodes. The column has an amber-colored "rising" section at its base and is surmounted by a red "flood" section. Water level must remain continuously within a zone for longer than 20 seconds before the section lights up. An audible alarm sounds automatically as each section illuminates.

The most dangerous condition is a rapid rise of short duration. If within 30 seconds of entering the lowest zone the level reaches a higher zone, the rising alarm is given. Should the rise be so rapid that the highest zone is reached in this time, an immediate flood alarm is given. The visual and audible rising and flood alarms are maintained until

AT DETECTION STATION, concrete pylon in river bed is studded with pairs of electrodes. When water rises, it completes electric warning circuit between electrodes.

Flood Alarm

acknowledged by the operation of the alarm cut-off key.

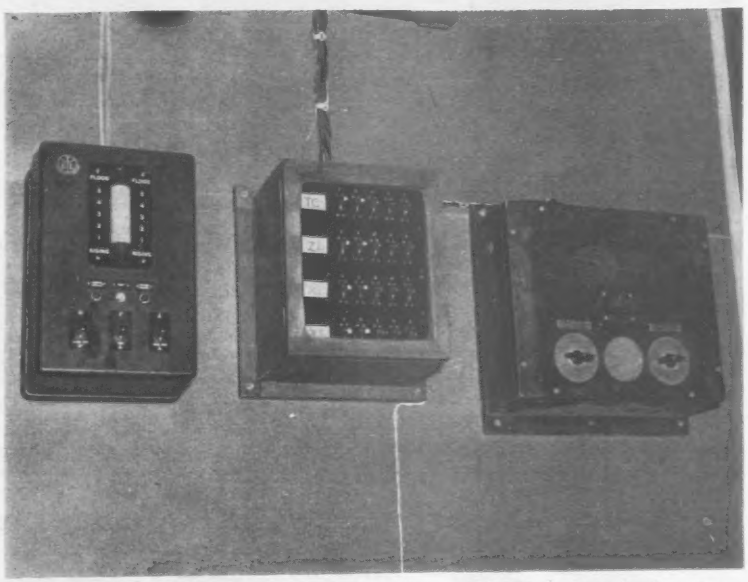
During normal conditions a "system normal" lamp is lit on the display panel, but should a fault occur a "system failure" lamp would light and an audible alarm would sound.

The entire system can be tested from the display panel by operating the test key. A signal is sent to the relays at the river site to connect all zone electrodes to test electrodes at the base of the pylon. These are always submerged, so the system reacts as it would to a sudden surge of water reaching Zone 5.

A 50 volt battery, automatically charged, powers the system if regular power supply fails.

The 1953 rail disaster occurred when a hot crater lake at the Whangaehu source overflowed. The water poured through a cave beneath a glacier and caused the ice to collapse.

(*International continued page 60*)



AT WARNING STATION, lighted depth indicator (left) shows river level upstream. Bell in cabinet (right) sounds alarm if flood threatens.

Now "impossible" trips are easy in this 4-mile-a-minute Twin-Bonanza.

For extra profit-push now . . .

Multiply Your "Go-Do-It" Men

with this

"Go-Farther-Faster" Beechcraft

Top men are scarce men. You can have "more" go-do-it men by using the ones you now have more often, over more miles, more profitably. The answer: a Beechcraft Twin-Bonanza.

Get there fast. This sleek twin cruises at 228 m.p.h. Get there farther . . . with a non-stop range of up to 1,650 miles! Get there comfortably, relaxed, ready. This Beechcraft is smooth, strong, stout-with-power to take it easily into and out of any of more than 6,000 U. S. airports.

Get there in force, when you need a whole team on the spot. With six interior arrangements available, the Twin-Bonanza can carry up to seven persons in "conference-room" comfort.

Get there any time. With an operating "ceiling" of more than 24,000 feet, you travel *above* most weather in the Beechcraft Twin-Bonanza.

Ask your Beechcraft distributor or dealer to show you how little it costs to send your top men "farther, faster" in a Twin-Bonanza.

For information about the **Twin-Bonanza** and the finest leasing and financing plans in aviation, see your Beechcraft distributor or dealer, or write Beech Aircraft Corporation, Wichita 1, Kansas, U. S. A.

Beechcraft

SUPER 18 · TWIN-BONANZA · BONANZA · TRAVEL AIR

BEECHCRAFTS ARE THE AIR FLEET OF AMERICAN BUSINESS

Public Works in Mexico Top the $1 Billion Mark

Ruiz Cortines, outgoing president of Mexico, cited the biggest public works program in the country's history as one of the outstanding achievements in his six-year term.

From 1952 to 1958 the Mexican government spent over $330 million ($73 million in the last year) to double its highway network. About 12,700 miles of new pavement made it Latin America's largest roadbuilding program.

Another $200 million went into railroad construction, including resumption of work on the Chihuahua-Pacific Railroad from the Gulf of California to the U.S. border. New water supply systems serve 875 towns with a total population of 5.2 million. Some $280 million was spent on irrigation systems to create more useful land, since barely 10% of Mexico's 200 million acres is now workable. Conditioning, dredging and conservation of ports on both Mexican coasts have taken $60 million from the federal treasury. Millions of additional dollars were spent for new dock facilities.

A $140 million chunk of federal funds went into modernization of Mexico City. This included $30 million for water supply, $27 million to reduce the city's sinking rate of several inches per year and to increase drainage levels, $30 million for 80 new markets, $12 million for 44 schools and other public buildings, $2 million for new parks, $34 million for city streets and sidewalks and $5 million for a sports center.

Malaya Hydro Development Gets a $35.6 Million Loan

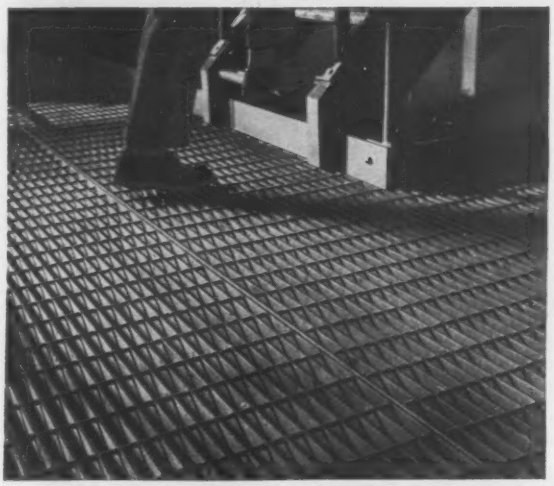
The Cameron Highlands hydroelectric project, largest development project ever undertaken by the Federation of Malava, will be partly financed by a $35.6 million loan from the World Bank. The money will help pay for the $51.2 million first stage of the job.

The development is the first of a series planned by Malaya to take advantage of abundant rainfall and mountainous terrain and to overcome the lack of fuel resources in the country. The job is the initial stage of a scheme to develop the power potential of a group of streams on the Cameron Highlands plateau, about 100 miles north of the capital, Kuala Lumpur.

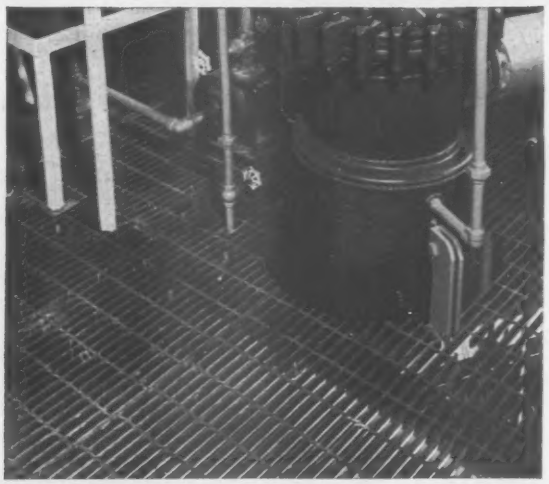
It will bring together the four rivers on the plateau and use the hydraulic head of about 2,000 ft to produce 79,300 kw from a 4,300 kw intermediate

designed for flexibility...Electroforged® for strength
Blaw-Knox Grating fits modern plant needs

More floor space . . . Platforms, mezzanines and loading docks made of flexible Blaw-Knox Electroforged Steel Grating increase storage space, enlarge feeder areas. Easily installed, and easily adapted to changing layouts.



Safer walking . . . on *non-slip* floors, walkways and stairs, Blaw-Knox Electroforged Steel Grating provides rigid one-piece construction and features the twisted cross bar to make every step a safe step.



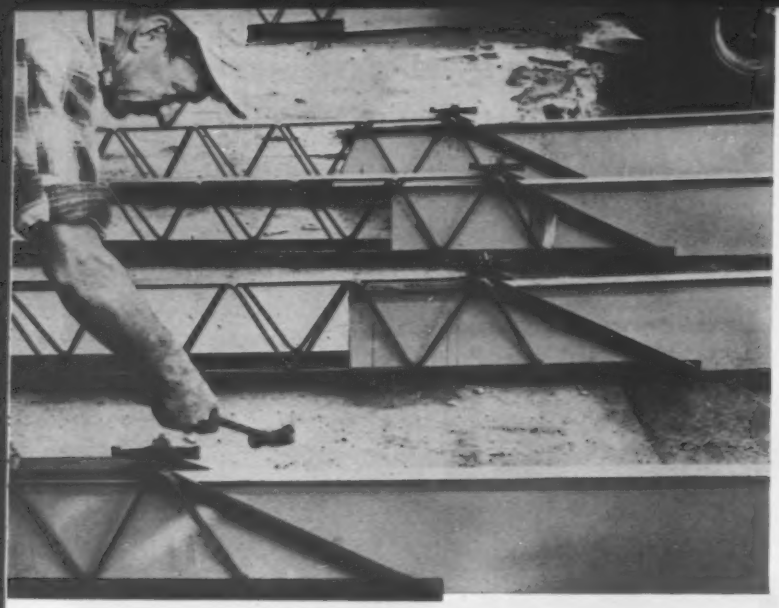
Fits anywhere . . . around pipes, beams and machinery to provide a neat, easy-to-maintain surface. There's nothing to wear, patch or catch dirt. And Blaw-Knox Grating admits more light and air for ideal working conditions.

Write for Bulletin 2527 and see how Blaw-Knox Grating can be custom fabricated to meet your plant improvement specifications.

BLAW-KNOX

BLAW-KNOX COMPANY

Equipment Division
Department A, Pittsburgh 38, Pennsylvania



The Beam that Adjusts to ANY SPAN... In Ten Seconds

AMERICAN PECCO'S HORIZONTAL SHORING BEAM

The lightweight, high-strength, horizontal Pecco-Beam is one of the most striking developments in the construction industry today. It is loaded with features designed to reduce time and labor costs to a bare minimum — and to add safety and stability to concrete formwork. Due to the unique "wedge lock", any unskilled person equipped with an ordinary hammer can secure the Pecco-Beam to the exact span in ten seconds. Made of strong, high quality steel, Pecco-Beams will carry uniform distributed weights of up to 6600 lbs. As weight is only 8 lbs/ft., handling and moving Pecco is an easy job . . . Available for sales or on a rental basis. For further information, write us today.

AD 36-2

APPROVED New York State B.S.A. NO. 4297

AMERICAN PECCO CORPORATION

PECCO HORIZONTAL SHORING

Federal Savings Building
188 East Post Road
WHITE PLAINS
NEW YORK

station and an underground main power station of 75,000 kw capacity.

The loan was made to the Central Electricity Board, a government authority serving 66% of the nation's power users. The power plants will increase the capacity of the board's central network by 50%.

Contracts for the project are being placed through international bids. Work is expected to start early in 1959 and be completed in 1964.

Radioactive Tracers Aid Dambuilders in Russia

Radioactive cobalt and chromium are being used extensively by Soviet engineers building the huge Stalingrad hydroelectric power station.

The Russians say they are using cobalt 60 to check and improve the efficiency of underwater excavation equipment. Rays emitted by the material enable the engineer to measure and regulate the ratio of water to suspended solids being handled by the equipment.

Chromium 51 is being used to check the discharge rates and quantities of bulk cement as it unloads from barges, which bring bulk stock from a cement works. The radioactive isotope is dosed into the cement either loose or in small paper bags. The rate of cement flow is measured by Geiger-Mueller counters.

Gamma-ray emitters are used to determine the density of fully set concrete. They also are credited with substantial savings in the testing of welds and fittings.

Frobisher Bay Gets First Causeway-Dock in Arctic

A causeway-type dock built in Frobisher Bay (north across the Hudson Strait from Labrador) for Canada's Department of Transport has cut cargo-handling costs 50% to 75%. The new dock—believed to be the first of its kind in the Arctic—permits tankers and freighters to tie up and unload directly instead of anchoring 1½ miles offshore, because of 38 ft tides, and ferrying cargoes ashore.

St. Lawrence Construction Co. of Quebec built the causeway-dock by dumping rock fill into the channel. The jetty is 750 ft long; it is 40 ft wide at the shoreline and flares out to an 80 ft width at its tip, where ships now dock.

The pier end of the causeway is buttressed by sixteen 42 ft deep caissons, 10 ft in diameter, that are filled with rock and anchored to the land end by steel cables. The pier also carries a pipeline for discharging fuel from smaller tankers.

(*International continued page 66*)

modern highways—

properly jointed to provide a greater and more economical service lifetime

"DESIGN PRACTICES" MANUAL AVAILABLE FREE OF CHARGE

This manual, entitled "Design Practices and Uses of Premoulded Joints in Concrete Pavements," features comprehensive technical data and illustrations of premoulded joint types, their applications and installation information. Send coupon today for your free copy.

The above highways, all properly jointed, were designed by forward thinking engineers for progressive state highway departments. Men who know that it pays to look beyond the initial cost, and design their highways to provide a greater and more economical service lifetime. Modern, properly jointed highways will help to reduce massive yearly maintenance costs. It will be to the advantage of every design engineer and state highway department to remember that dollars saved through reduced maintenance will provide miles of new highways for the same public expenditure.

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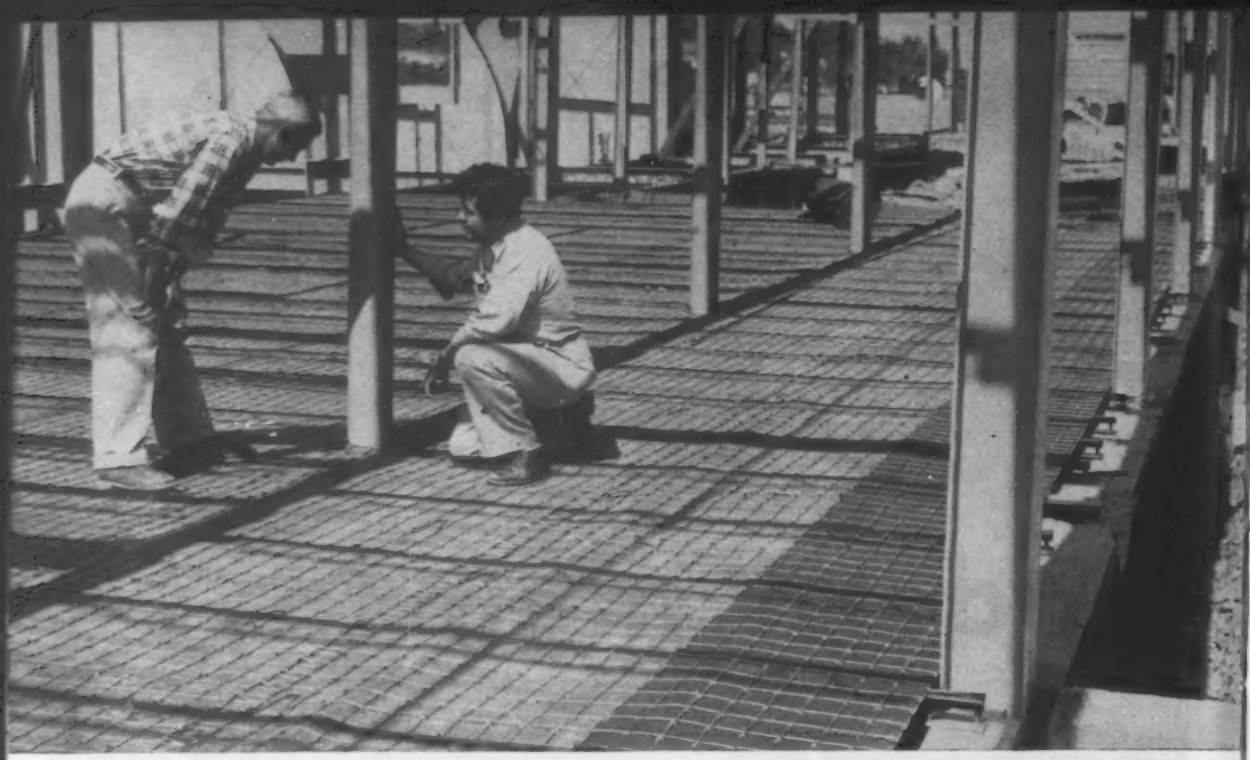


Fastest coverage with Steeltex. Steeltex roll, 125 feet long and 4 feet wide, unrolls quickly and is easily cut to fit around irregular-shaped objects like the steel columns shown above at Penn Township Senior High School near Pittsburgh. Steeltex provided reinforcing and form for 100,000 square feet of floors at this school.

12-Point Comparison Proves

Steeltex Floor Lath Provides Quality Construction But Can Cost Less Than Competing Materials

For more than 30 years, quality-conscious architects, engineers and contractors have specified Steeltex Floor Lath sold by Pittsburgh Steel Products Division of Pittsburgh Steel Company.

They realize that as a centering material—specially designed for joist construction—Steeltex speeds work, cuts costs and improves the quality of construction. That's why Steeltex has provided form and reinforcing for millions of square feet of floors and roofs set on steel, concrete and wood joists.

Here, at right, are 12 critical points of comparison which show why these men choose Steeltex over other centering materials.

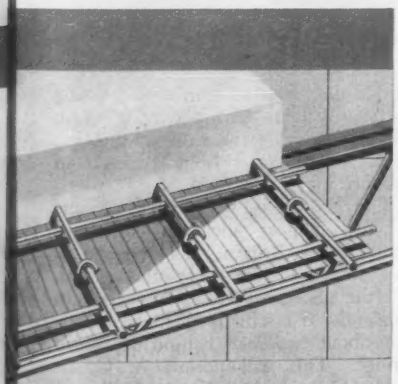
12-Point Comparison

	Steeltex	Sheet Material
Engineering		
(1) Lateral restraint of top chord of joists	Yes	Not assured
(2) Positive reinforcement	Yes	No
(3) Galvanized	Yes	Extra Charge
(4) Continuous reinforcement	Yes	Only by adding mesh
Cost		
(5) Packaging	No charge	Extra bundling and packing charges
(6) Accessories	No charge	Extra clip and washer charges
(7) Lap	Side lap only	Side and end lap
(8) Additional reinforcing	None required	Additional mesh, 10 to 4 gage
(9) Additional reinforcement placing cost	None	Yes
Contractor		
(10) Material	One roll size spans different joist spacings	Many sheet sizes
(11) Weight handling	36# per 100 sq. ft.	⅜ HyRib Pl 44# ¾ HyRib Pl 60# Corrugated 76# Corrugated Galv. 84#
(12) Faster coverage	Rolls 4 x 125 ft.	Sheets 25 to 28½ inches 6 ft. to 16 ft. 3 inches

Steeltex is easily unrolled by one man. Steeltex weighs only 36 pounds per 100 square feet yet is strong enough to support heavy slabs. Steeltex saves precious construction dollars by permitting on-the-job changes at no extra cost. Steeltex has only a side lap for joining sections together. Clips are furnished free. Sheet material requires side and end laps plus additional reinforcing mesh, 10 to 4 gage. Steeltex needs no additional reinforcing.

Steeltex gives freedom of design. Steeltex, cut and bent easily and quickly here at Ecorse School in Michigan, covers a depressed sanitation facilities area in minutes. Steeltex provides continuous reinforcement. So does sheet material—but only after additional mesh is installed. Yes, Steeltex comes galvanized at no additional cost. There's an extra charge for galvanized sheet material.

Free accessories. Workman at Purdue University's new married student quarters uses clips furnished free to attach Steeltex to steel joists. Steeltex wire mesh reinforcing carries its waterproofed form right on its back and is specially designed for joist construction. Steeltex speeds work, cuts costs, improves quality of construction.



Next time you specify or use a centering material remember these facts. Steeltex, which carries its waterproofed form right on its back, saves time and money—improves quality of construction.

Put Steeltex' advantages to work for you as thousands of others have. Call your nearest Pittsburgh District sales office today. You'll be glad you did.

▶ **See Sweets Catalog Section 2-B**

Steeltex®

Pittsburgh Steel Products

a division of Pittsburgh Steel Company

Grant Building • Pittsburgh 30, Pa.

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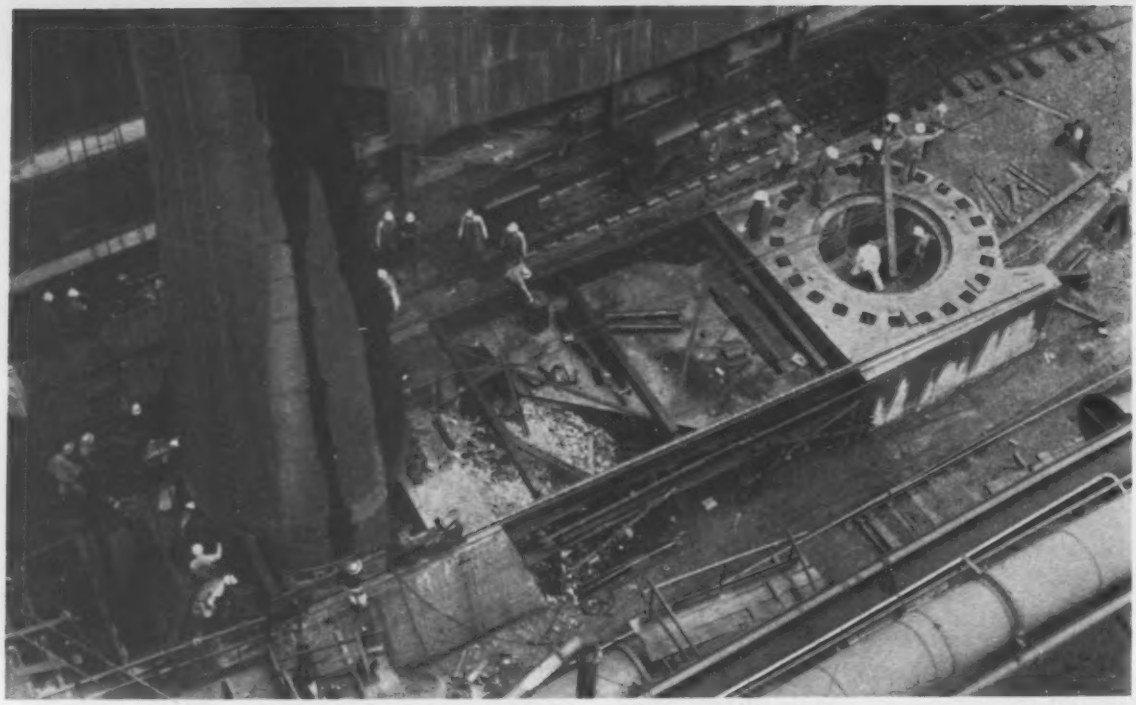
Chicago	Dallas	Detroit	New York	Tulsa
		Houston	Philadelphia	Warren, Ohio



Engineers Roll 231 Ft Chimney to New Base

A 231 ft high coke-oven chimney was rolled 50 ft to a new foundation by engineers in South Wales, Australia. Not a brick dropped from its 302 ton lining.

New Castle Steel Works officials found the old foundation's piles were rotting and decided to move the stack to a new base, rather than underpin the old one.

Workers welded a steel-plate shelf inside the chimney base to support the brick and erected a 19 ft wide railway between the new and old foundations. Riggers strung four guys from the stack top to tackles on deadman 200 yd out on each side. Four 100 ton jacks lifted the stack 1½ in. onto beams astride the rails.

Engineers controlled the horizontal shifting of the stack by radio. Level tolerance of only 0.015 in. made synchronization of the operation necessary. The move was completed in 30 minutes.

Forth Span Won't Be Fourth Longest For Long

First-stage work is starting on what will be the fourth longest suspension span in the world and the longest span ever erected outside the U.S. The project is a $46.2 million highway bridge across Scotland's Firth of Forth

The 5,980 ft structure will have a 3,300 ft center span that is exceeded only by the main spans of the Golden Gate (4,200 ft), Mackinac (3,800 ft) and the George Washington (3,500 ft) Bridges. The proposed Narrows Bridge will have a 4,400 ft centerspan, pushing the Scot bridge into fifth place.

The Forth Bridge will have two 24 ft wide vehicular roadways, two 9 ft cycle lanes and two 9 ft pedestrian walks. Its 500 ft high main towers will be supported by concrete piers. The deck will be supported by two main cables each 24 in. in dia and containing 12,000 strands of .196 in. dia high tensile wire. The anchorages will be in rock. The deck for the main span will be steel battle deck while the deck of the two 1,340 ft side spans will be of reinforced concrete. The longitudinal stiffening trusses will be 27.5 ft deep. It will have two lateral stiffening systems, one level with the top chord of the stiffening trusses and the other level with the bottom chord.

The bridge is being financed partly by counties and cities in the vicinity but mostly by a loan from the national government, which is to be repaid from toll revenues.

Two contracts totaling $30.5 million have been awarded. The Stage 1 contract for $6.2 million went to John Howard & Co. for foundations and piers. The Stage 2 contract for erection of the bridge itself amounts to $24.3 million and was given to the A. C. D. Bridge Co., a joint venture consisting of Sir William Arrol & Co., Ltd; Cleveland Bridge and Engineering Co., Ltd.; and Dorman Long Bridge and Engineering Co., Ltd.

The Firth of Forth Bridge is one of two almost identical structures planned for Britain. The second is the Severn Bridge over the mouth of the Severn River in southern England. It's scheduled for construction about two years behind the Forth Bridge. This will permit A. C. D. Bridge Co., which will erect the Severn Bridge, to utilize its equipment on both structures.

Structural designers for the Forth and Severn bridges are Mott, Hay & Anderson, and Freeman, Fox, & Partners. Sir Giles Gilbert Scott is consulting architect for the Forth Bridge.

(*International continued page 68*)

Reinforced CONCRETE

Saves 14% on cost of luxury apartment building

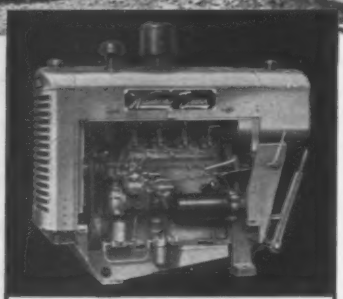
PHOENIX TOWERS
Architect: Ralph C. Harris, A.I.A.
Phoenix, Arizona
Structural Engineer:
Miller Engineering Co.
Chicago, Illinois
General Contractor:
Del E. Webb
Construction Company
Phoenix, Arizona

CONCRETE REINFORCING STEEL INSTITUTE
C.R.S.I.
FOUNDED 1924

Newest and largest luxury co-operative apartment building in the Southwest is the handsome $3,000,000 fourteen-story Phoenix Towers. Architect Ralph C. Harris chose flat slab reinforced concrete construction which made it possible to cantilever for balconies and sunshades very economically. The absence of projecting beams into the ceilings of rooms below in this type of construction eliminated the necessity for suspended plaster ceilings.

Architect Harris further points out that cost comparisons showed a 14% saving with reinforced concrete over other framing systems. Before you build, investigate this economical, flexible, and timesaving medium of construction. Compare—and you will design for reinforced concrete.

Concrete Reinforcing Steel Institute
38 South Dearborn Street, Chicago 3, Illinois



Powerful Waukesha Utility Four—Model 180-DLCU Diesel—four cylinder, 3½-in. bore x 3¾-in. stroke, 144 cu. in. displacement, counterbalanced crankshaft.

REICH

drills either way

ROTARY or DOWN-THE-HOLE

with

WAUKESHA *Diesel* POWER

The *small* rig that's designed for down-the-hole tool drilling of holes up to 6½-in. diam. in hard rock—the Waukesha Diesel-powered, Model C-250 Reich Drill is said to be the only machine of its kind in the world. It does the work of small hard rock rigs that drill with drifters; and large hard rock machines that drill with down-the-hole tools. But the Reich is only half the size... and half the cost...of large machines. The makers, Reich Bros. Mfg. Co., Terre Haute, Ind., gave the drill an equally versatile power unit. The Waukesha 180-DLCU has special Diesel design characteristics including the patented spherical combustion chamber which gives lively responsive acceleration, smoothness of operation, and clean burning with high economies both of maintenance and fuel. Get the details of Waukesha dependability in Bulletin 1627.

WAUKESHA MOTOR COMPANY, WAUKESHA, WISCONSIN

NEW YORK TULSA LOS ANGELES 399

Joint Venture Plans Iranian Area Development

Technical and management services for the modernization and economic development of a 50,000 sq mile area in Iran will be provided by Ebasco Services, Inc., New York City.

A study will be made of the resources and economic potentials of Kerman Province in southern Iran by the Kerman Development Corp., New York City, under an agreement with Iran's Plan Organization (ENR Sept. 25 p. 50). The Kerman Corp. was formed jointly by the Electric Bond and Share Co., Ebasco's parent company, and Allen & Co., New York investment firm, which will provide financial services.

A preliminary reconnaissance will start the program. Recommended projects will then be submitted to the Plan Organization for detailed study. These studies will include present and future demand and supply demands for the resources of the region, recommendations for the type and size of facilities to be installed and estimates of investments and operating costs of the proposals.

Training of Iranian professional, technical and other personnel to service the projects will be part of the program.

Irrigation is Under Way In China's Biggest System

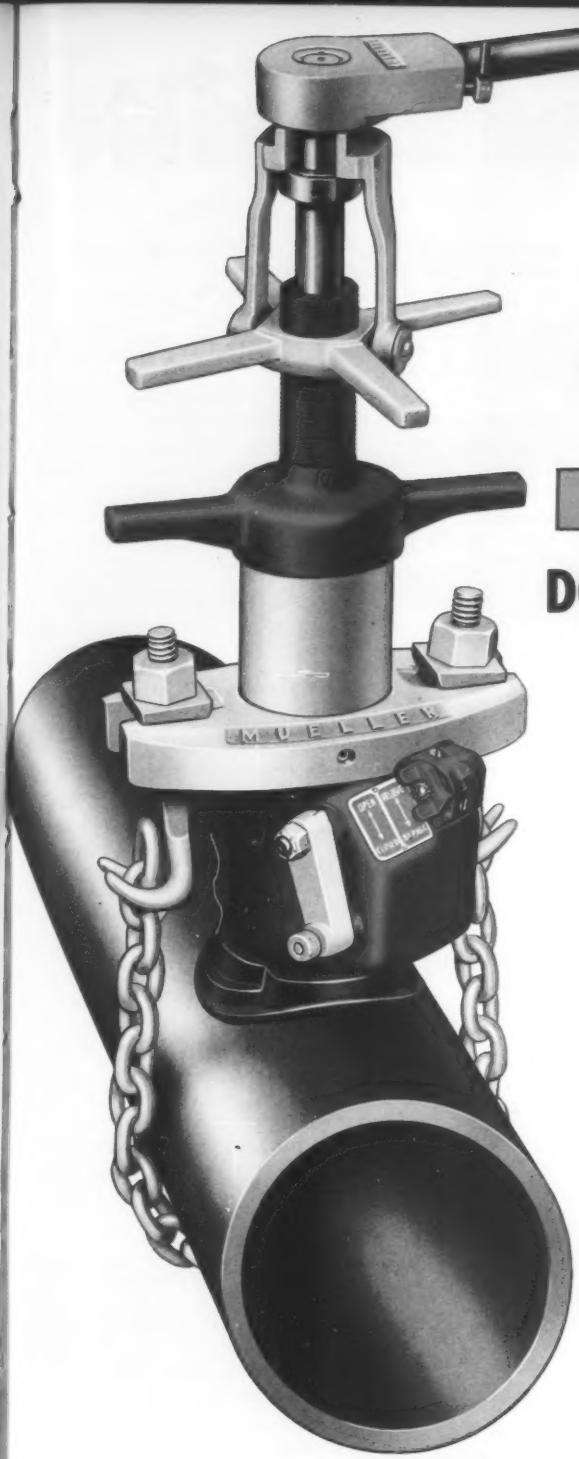
The biggest irrigation system to be built in Red China has been put into operation, Peking radio reports. The 1,860 mile canal system is located north of the Yangtze River along the lower reaches of the Yellow River.

The system will reportedly irrigate some 3¼ million acres of farmland along the Honan and Shansi Provinces. It also will minimize flood damage by diverting high flows and make possible inland navigation between the Yellow and Yangtze Rivers.

AEC Drops Opposition To Columbia River Dam

The Atomic Energy Commission has withdrawn its opposition to the proposed Ben Franklin Dam on the Columbia River near Pasco, Wash. AEC was satisfied that proposed dikes along the Columbia would prevent water backed up by the new dam from interfering with the operation of its Hanford Works.

Addition of dikes would increase the cost of the estimated $150 million project by some $20 million. The project is under study by the Washington Public Power Supply System, composed of public utility districts in the state.



NOW ...a NEW MUELLER®

DOUBLE PRESSURE CHAMBER TAPPING MACHINE...

the B-100

MAKES FASTER TAPS!

ASSURES PRESSURE TIGHT CONNECTIONS!

PROVIDES EASY, TROUBLE-FREE OPERATION!

use it by hand or with power...

FORM NO. W-8912

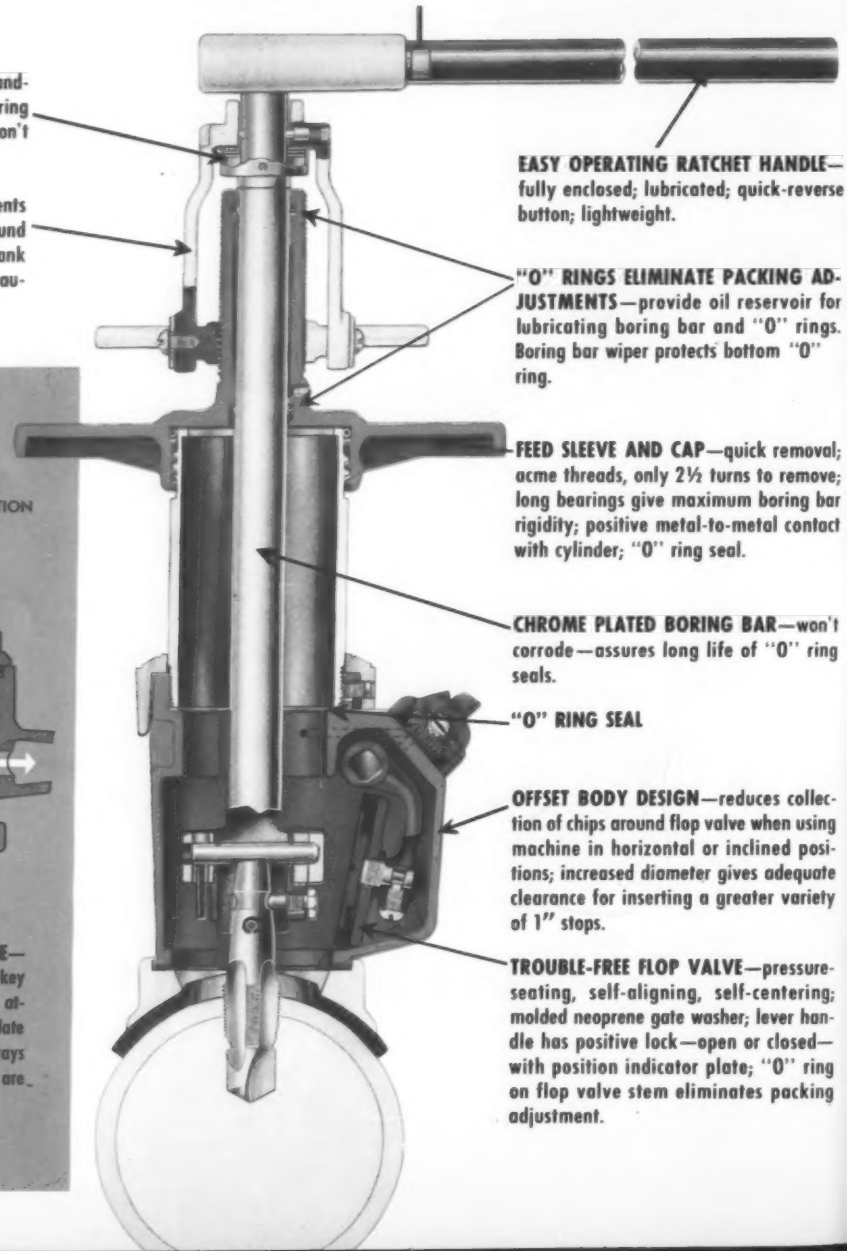
PRINTED IN U.S.A.

Features and Benefits

Fast taps, pressure tight connections and easy trouble-free operation provide an operating efficiency so necessary to meet today's demands. The new B-100 Drilling, Tapping and Inserting Machine gives these results IMMEDIATELY and CONSISTENTLY.

The machine incorporates the same basic double pressure chamber, single boring bar design principle which, through 86 years of field experience, research and testing, has proved to be the most efficient in operation. Its design permits the operator to handle the machine in lightweight sections. The tapping and inserting operations are performed separately. Tool or stop may be safely removed from the machine at any time during the operation for inspection or replacement, if necessary.

The "B-100" is *all new* from the saddle up, and has plus features we know you have wanted. Look over these features—see how they all combine to contribute to faster taps, pressure tight connections and easy, trouble-free operations.



ANTI-FRICTION THRUST COLLAR—sandwich type nylon-teflon-nylon bearing sealed in steel case; no lubrication; won't gall under power operation.

FEED NUT AND YOKE—spring detents hold feed yoke securely in place around boring bar; acme threads; square shank on feed yoke fits power operator for automatic feed.

EASY OPERATING RATCHET HANDLE—fully enclosed; lubricated; quick-reverse button; lightweight.

"O" RINGS ELIMINATE PACKING ADJUSTMENTS—provide oil reservoir for lubricating boring bar and "O" rings. Boring bar wiper protects bottom "O" ring.

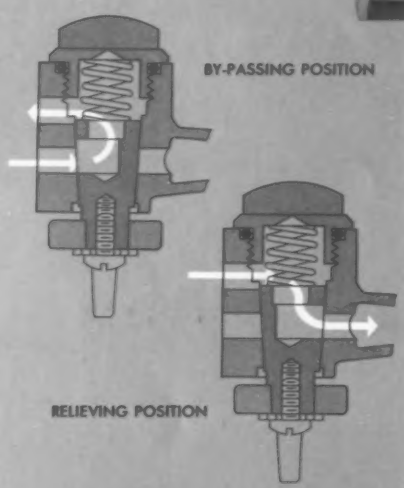
FEED SLEEVE AND CAP—quick removal; acme threads, only 2½ turns to remove; long bearings give maximum boring bar rigidity; positive metal-to-metal contact with cylinder; "O" ring seal.

CHROME PLATED BORING BAR—won't corrode—assures long life of "O" ring seals.

"O" RING SEAL

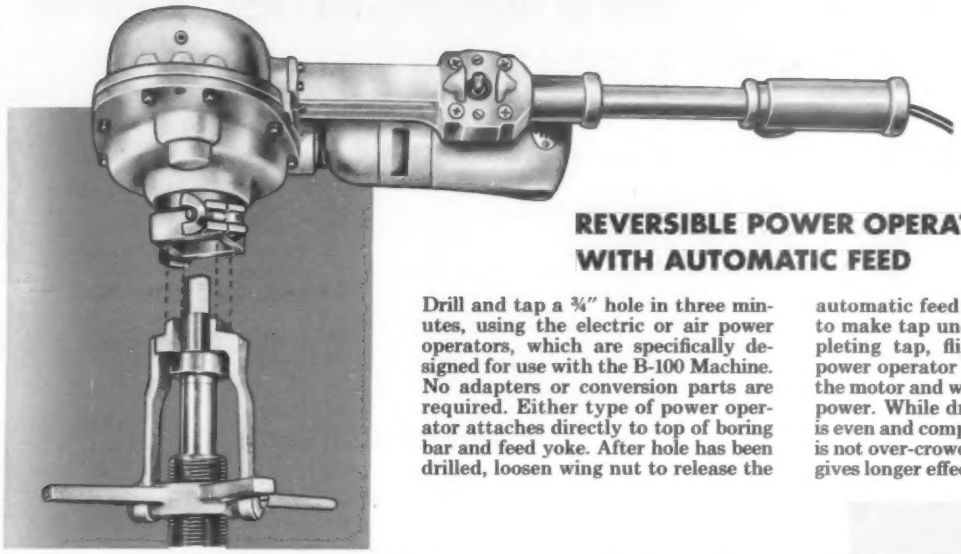
OFFSET BODY DESIGN—reduces collection of chips around flop valve when using machine in horizontal or inclined positions; increased diameter gives adequate clearance for inserting a greater variety of 1" stops.

TROUBLE-FREE FLOP VALVE—pressure-seating, self-aligning, self-centering; molded neoprene gate washer; lever handle has positive lock—open or closed—with position indicator plate; "O" ring on flop valve stem eliminates packing adjustment.



EASILY MAINTAINED BY-PASS VALVE—self-contained, spring-loaded, ground key valve with fluid escape deflector; easily attached; wing-type handle with indicator plate clearly shows position. Straight passageways through ground key valve and body are easily cleaned.

owners and operators will like...



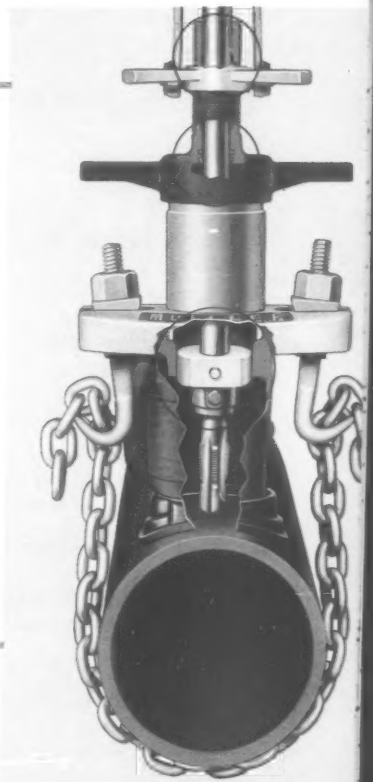
REVERSIBLE POWER OPERATOR WITH AUTOMATIC FEED

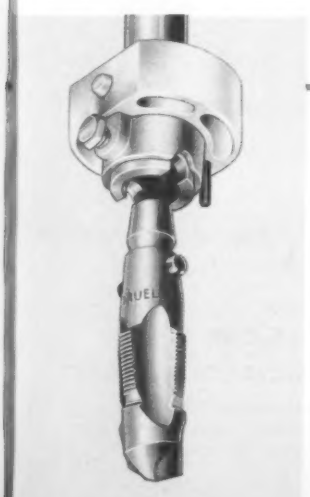
Drill and tap a ¾" hole in three minutes, using the electric or air power operators, which are specifically designed for use with the B-100 Machine. No adapters or conversion parts are required. Either type of power operator attaches directly to top of boring bar and feed yoke. After hole has been drilled, loosen wing nut to release the automatic feed driver, then continue to make tap under power. After completing tap, flip the switch on the power operator to reverse direction of the motor and withdraw the tool under power. While drilling, boring bar feed is even and completely automatic—tool is not over-crowded; does not overheat; gives longer effective tool life.

ASSURED RIGIDITY ON THE MAIN IN THE BORING BAR

Pressure-tight connections start with complete machine rigidity on the main. Aluminum alloy chain yoke has high strength—lightweight. Chain hook washers are widely spread and deeply recessed in yoke to prevent slipping off on large diameter pipe. Chain hook cannot rotate—chain cannot twist during tightening. Square shank on chain hook fits inside square hole in chain washer. Square shank on chain washer prevents turning in yoke. Acme threads on chain hooks give long life. Chain hooks, chain hook washers and chain hook nuts are cadmium plated to resist corrosion.

Perfect alignment of the boring bar is assured by three boring bar bearings; two, widely spaced in the feed sleeve, and the third at the extreme bottom end of the boring bar. The lower bearing is of molded nylon and closely bears against a machined surface in the body when the drill first contacts the main and also when the stop is being inserted. Curvature of the pipe cannot deflect the drill—tools are relieved of unnecessary stresses and give longer effective life. These three widely spaced boring bar bearings assure perfect centering of tool and stop for accurate threading and a pressure-tight connection.





NEW TOOL RETAINER WITH INDEPENDENT DRIVE

Drive pins in shank of new combined drill and tap or E-Z Release Screw Plug slip into notches in the boring bar socket. All driving force is exerted against these drive pins, preventing damage to the surface of the tool shank. Tool retaining screw in replaceable bronze sleeve bears against the upper part of a circular groove around tool shank—holds tool tight in boring bar socket. This new holding and driving arrangement assures perfect tool-boring bar alignment and maximum rigidity, for long tool life.

No problem to remove tools in the "B-100". Just loosen the tool retaining screw, tap the knockout pin in the tool holder and the tool slides out in your hand.

MUELLER®

B-100 DRILLING, TAPPING AND INSERTING MACHINE

CAPACITY AND USE

The B-100 Machine will drill and tap the main and insert the following items under pressure: corporation stops and gas main stops ½" through 1"; machine inserted valve tees ¾" and ¾"x1"; and pipe plugs ½" through 2½".

Combined drills and taps and screw plugs are not interchangeable between the B and B-100 Machine. Saddles are interchangeable with the B Machine.

WORKING PRESSURE

90 p.s.i. without power clevis.
250 p.s.i. with power clevis.

B-100 MACHINE AND EQUIPMENT FURNISHED

- Ratchet handle
- Small saddle gasket
- Large saddle gasket
- Chain hooks and nuts
- Chain washers
- Round link chain
- Chain hook nut and tool retaining screw wrench
- Body cleaning chisel
- Lubricating oil
- Cutting grease

Shipped in strong wooden chest. Total shipping weight 97 pounds.

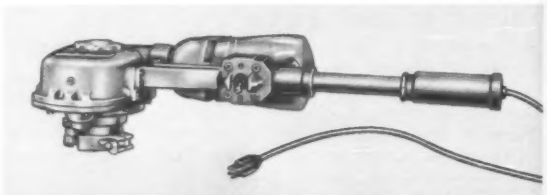
Handling weight during operation: upper section 19 pounds; lower section 23 pounds.

EQUIPMENT TO BE SELECTED

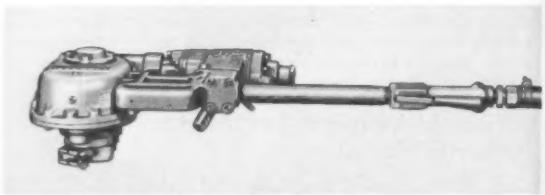
- Combined drills and taps
- Saddles
- Screw plugs
- Extracting tools

OPTIONAL POWER OPERATORS

Electric or air power operators are offered as optional equipment for use with the B-100 Drilling and Tapping Machine. Either unit is suitable for 1" taps through any kind of pipe. Drive spindle turns at 35 r.p.m.—motors are reversible.



H-603 ELECTRIC POWER OPERATOR
110-120 volt A.C. or D.C.



H-604 AIR POWER OPERATOR
90 p.s.i. pressure (full load)

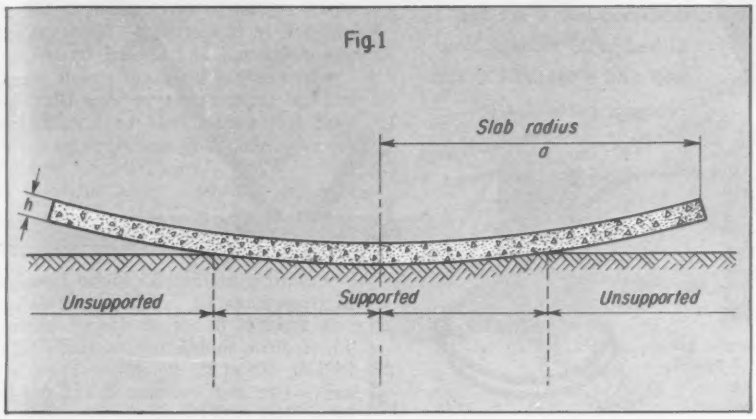
OPTIONAL EQUIPMENT FOR SPECIAL USES

- Power clevis
- Chain spreader
- Corporation stop wrench
- Round link extension chains
- Long Ratchet Handle Bar (used for drilling and tapping operations on cuts over 1" in size).

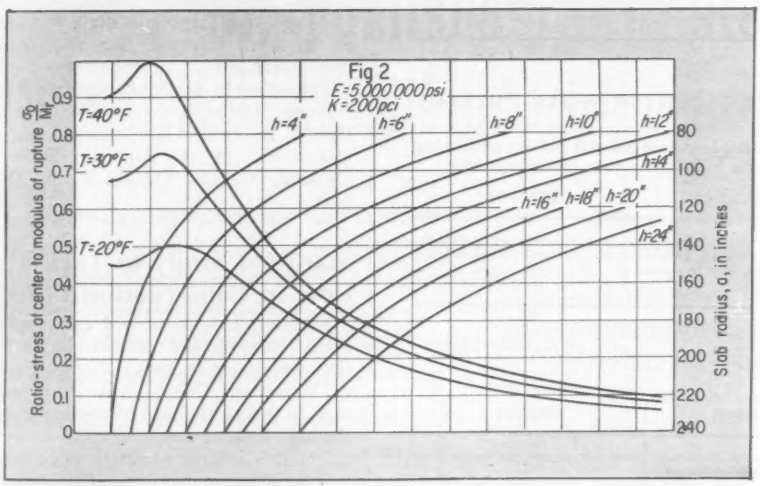
MUELLER CO.
DECATUR, ILL.

Factories at: Decatur, Chattanooga, Los Angeles;
In Canada: Mueller, Limited, Sarnia, Ontario

Warping in Concrete Slabs Is Studied



SECTION OF CIRCULAR SLAB was basis for the study. Temperature and moisture gradients were assumed to increase linearly across the section.



NOMOGRAPHS give the ratio of maximum normal stress of modulus of rupture for combinations of temperature, slab thickness and radius of warping.

Two Purdue University researchers—Prof. Gerald A. Leonards and Prof. M. E. Harr—have derived formulas for the stresses and deflections in warped slabs. The formulas allow for the condition when the slab is only partially supported by its base.

The researchers first set up and solved, for a free edge boundary condition, differential equations that considered a circular slab with partial support.

Next they determined deflections, stresses and degree of support for a variety of combinations of slab size and weight, thickness, moduli of elasticity and subgrade reaction and temperature and moisture gradients.

Then the researchers plotted nomographs from these data. Solutions are also available for a variety of superimposed loading conditions.

The importance of considering the curling effect in pavement design has become evident. Serious cracking continues to develop in modern, well-constructed concrete slabs; in some instances cracks develop in newly-laid pavement even before the road is opened to traffic.

Whenever top and bottom surfaces of a concrete slab are at different temperatures or have different moisture contents, the slab will show this curling effect. The degree of warping depends on the moisture and temperature gradients. But prior to the work at Purdue, engineers have assumed full support of the slab by the base course—or they have corrected for warping effects by semi-empirical modifications of existing formulas.

For the special case in which the slab does remain in full contact with its support, the Purdue equations reduce to those developed by H. M. Westergaard. The deflections computed from the Purdue equations show good correlation both with early studies made by W. K. Hatt on the effects of moisture on concrete and with recent tests by the Portland Cement Association on the effects of temperature gradients.

Fire Safeguard

Roof ventilation formula released by study group

The burning and destruction of General Motors' four-year-old plant at Livonia, Mich., in 1953 (ENR Aug. 20, p. 28, and Aug. 27, p. 96, 1953) called attention to a frequently neglected fire hazard. This is: Concentrated smoke and hot gases can produce considerable fire damage in a flat-roofed industrial building—not only through actual combustion—but also by causing structural failure of the building framework.

Now a study sponsored by GM has developed methods for selection of optimum sizes and location of roof ventilators and monitors, designed to quickly exhaust smoke and hot gases and thus aid in fire control. A scale model industrial building equipped with fire and smoke generating equipment was used for tests.

Here are the recommendations for effective emergency smoke and heat release, in summary form:

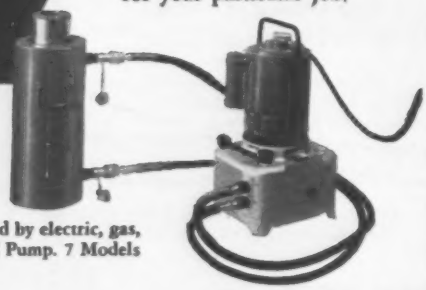
- Emergency roof ventilation should be provided through the combined use of roof ventilators or monitors and draft curtains for effective smoke and heat release. Draft curtains, on the underside of the roof, should fence off ceiling areas, thus confining the smoke and hot gases within zones from which they can be vented via monitors or roof ventilators.
- Gravity-type roof ventilation should provide minimum ratios of vent area to floor area of 1:150 in areas of minor hazard; 1:100 in areas of normal hazard;

BIG 4

IN HYDRAULIC JACKS AND PULLERS BY SIMPLEX

...cut costs

Whether you push-pull-or-lift, SIMPLEX Hydraulic Equipment guarantees you satisfaction. The "BIG 4" described below are furnished in *28* models. You will find a SIMPLEX unit for your particular job.



1 "RE-MO-TROL" PULLERS

The "Re-Mo-Trol" Puller Unit is a powerful hydraulic Ram connected by high-pressure hose and remotely operated by electric, gas, air-powered or with hand-operated Pump. 7 Models have *"center-hole"*.

CAPACITY	APPLICATIONS	BENEFITS
10-100 tons 11 models	tensioning wire in pre-stressing concrete, pulling or pressing sleeves, gears, pinions, etc.	lift-pull-or-push in any direction easily & safely from a distance!

2 SIMPLEX "JENNY" CENTER-HOLE PULLERS

The "Jenny" is a rugged, *self-contained* unit for pulling or pushing the most difficult jobs with hydraulic power and efficiency.

CAPACITY	APPLICATIONS	BENEFITS
30-100 tons 6 models	mines, oil fields, shipyards, railroads, diesel, general maintenance, post tensioning concrete, etc.	push-pulls-lifts without torque through "center-hole".

3 ROL-TOE JACKS

CAPACITY	APPLICATIONS	BENEFITS
10, 25 and 50 ton 3 models	for toe lifting heavy machinery and equipment, also transformers.	lifts full capacity on cap or toe!

4 STANDARD HYDRAULIC JACKS

CAPACITY	APPLICATIONS	BENEFITS
3-100 tons 8 models	all general construction industrial maintenance problems.	smooth lift power, service-free operation!

500 lb. "Jack in a Box"

This 3" high Simplex Screw Jack will lift 500 pounds two inches. Has all operating and construction features of larger screw jacks. Also is ideal desk ornament, paper weight. 50c ea. Shipped prepaid cash or check.

SIMPLEX JACKS

TEMPLETON, KENLY & CO.

2553 Gardner Road • Broadview, Illinois

1:30 in areas of special hazard.

- Roof monitors for ventilation should be provided in all new buildings and should be as continuous as possible. They should be spaced with distances between sash in near sides of adjacent monitors, not to exceed 160 ft, 120 ft and 80 ft, respectively, for areas of minor, normal and special hazard.
- In existing buildings, small monitors or continuous-type ventilators at least 4 ft wide should be installed on the same maximum spacing as for monitors. Where interferences prohibit monitors, unit-type vents, singly or in groups, should be located in repeating patterns symmetrical with walls or draft curtains.
- Draft curtains should be installed in truss areas to divide the building into areas of minor or normal hazard. These areas should not exceed 70,000 to 100,000 sq ft, depending upon bay sizes. The draft curtains should not be more than 300 ft apart.
- In areas of special hazard, draft curtains should not be more than 150 ft apart. In monitor or sawtooth-roofed buildings, only transverse draft curtains are required; however, they should be continuous across all monitors.

The research was conducted by the Armour Research Foundation, Heat-Power Research Laboratory, under sponsorship of the Argonaut Reality Division, General Motors Corp., Detroit.

Stanford Study to Tackle Cuts in Construction Costs

Stanford University will study operations research and cost reduction in heavy construction for the Navy Bureau of Yards and Docks. The study will seek to reduce the cost of repetitive operations such as dredging, pile driving, material handling, concrete placement and building erection.

With a one-year contract worth $20,400, Clarkson H. Oglesby and John W. Fondahl, professor and assistant professor of civil engineering, will make the study. Aided by other faculty members and fifth-year engineering students, they will apply pre-planning, crew balance and process chart analysis to present and future jobs. Statistics, mathematical formulas and electronic computers are among their tools. Stanford got the contract chiefly because of its graduate program that trains civil engineers for the construction industry.

By studying waterfront construction projects and work carried on by the Sea-Bees, Professors Oglesby and Fondahl will try to devise better analytical techniques in the cost-of-construction field.

SJI publishes NEW steel joist COMBINED SPECIFICATIONS and LOAD TABLES

Combined specifications and load tables for all types of open web steel joists have been published by the Steel Joist Institute, providing a handy reference for the designing architect and engineer. "S" series and "L" series joists uniformly designed are covered in this one over-all standard specification.

While SJI-approved open web steel joists to be manufactured under the new SJI standard will not be available from member companies before January 1, 1959, the combined specifications and load tables have been published at this time to permit incorporation of the new joists into many structures now in the planning stage.

In other new developments, the SJI now offers all SJI-approved open web steel joists based upon 20,000 psi working stress, and has increased the number of SJI-approved "S" series steel joist types from 17 to 25.

These improvements by the Steel Joist Institute make SJI-approved joists a better investment than ever before!

Send coupon for free copy of combined specifications and load tables.

STEEL JOIST INSTITUTE

1346 CONNECTICUT AVE., N. W. • WASHINGTON 6, D. C.

AMERICAN BRIDGE DIVISION
United States Steel Corporation
ARBUTUS STEEL COMPANY
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Please send me a copy of your new Standard Specifications and Load Tables

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Company_____

Address_____

City_____ Zone____ State_____

JACKSON *Paving Tubes*

INTERNAL AND SURFACE TYPES

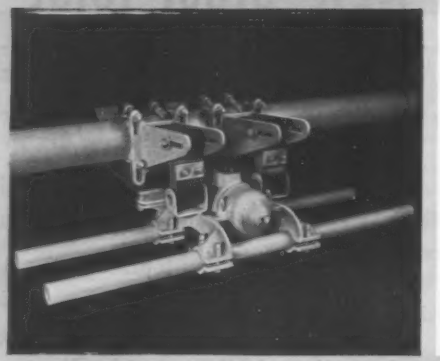
for Thorough Vibration of All Slabs 6" to 32" thick, 25' wide

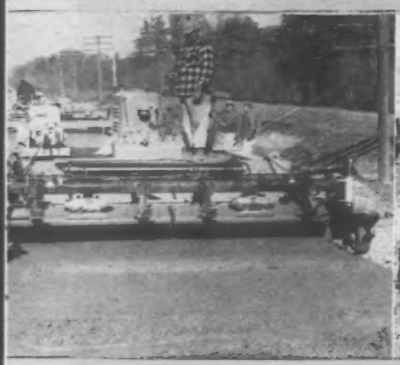
Supplied with exceedingly powerful motors, there is no job of concrete HIGHWAY OR AIRPORT paving too tough for a JACKSON VIBRATORY PAVING TUBE. They are exceedingly flexible. Both internal and surface types may be had in just the right number of units to fit the job. And since the internal and surface vibratory units are interchangeable with optional equipment, the contractor who owns a JACKSON PAVING TUBE can quickly change from one to the other. Their use assures:

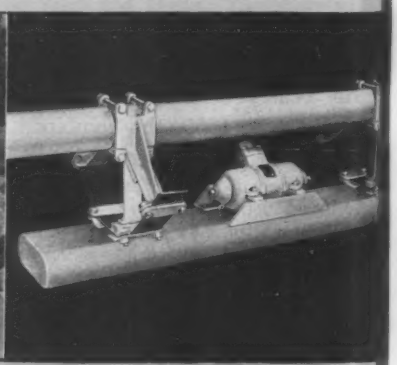
1. Maximum compressive strength and impermeability of the hardened concrete through use of dryer, more economical mixes.
2. Faster progress in normal highway paving.
3. Complete and uniform compaction throughout the mass, with no mortar streaks — even on 25' airport slabs. (It is equally efficient where air-entraining cement is used).
4. Adequate puddling at sideforms on the average paving job.
5. Excellent finish without excessive mortar.

See them at your Jackson Distributor
Name and literature on request

INTERNAL TYPE as shown in operation above: Tubes vibrate deep in concrete. One unit, as shown, for each 5' (maximum) of slab width. Easily attached to finisher or spreader. GREAT FOR THICK, HEAVY AIRPORT RUNWAYS.





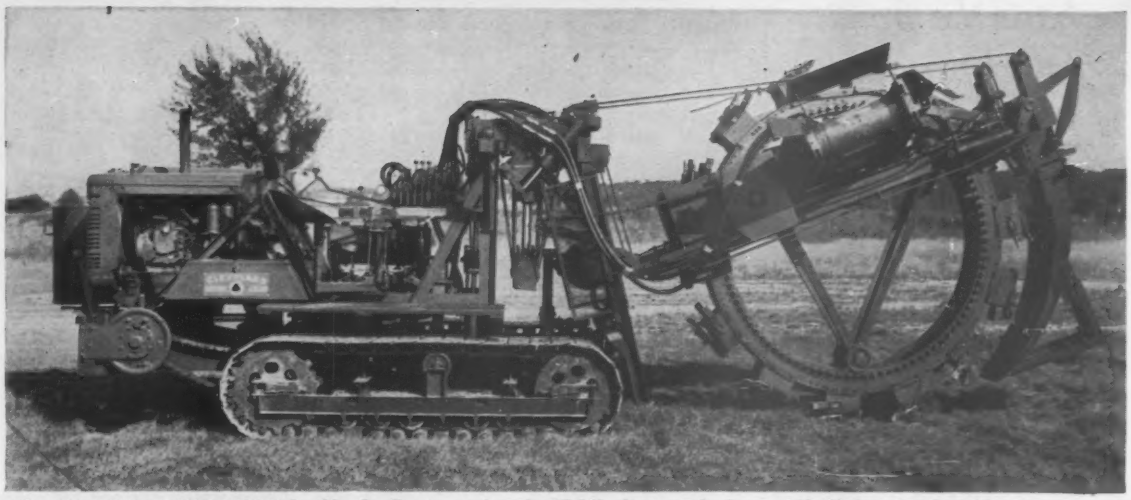


Shown above is the surface type tube in action (tube raised and lowered) IDEAL FOR HIGHWAY SLABS OF ALL WIDTHS AND THICKNESSES.

INTERCHANGEABILITY: Internal and surface vibratory units can be interchanged very quickly on a JACKSON PAVING TUBE.

SURFACE TYPE: Vibrates on the surface, accomplishing thorough densification of all concrete slabs of highway thickness. One unit, as shown at left, for each 6' (maximum) of slab width. Attaches to front of finisher.

JACKSON VIBRATORS, INC. LUDINGTON, MICHIGAN



ONE OF FOUR TRENCHERS in Cleveland's new series, the JS-30's digging wheel can shift 30 in. to either side.

Trencher's V Conveyor Ups Productivity

Cleveland Trencher calls its V-shaped discharge conveyors for four new trenchers the first basic advance in conveyor design since it originated the arc conveyor some 30 years ago. The company unveiled the digging-wheel machines at a recent factory meeting for its U.S. and Canadian distributors.

Claimed for the V-shape: more clearance under the digging wheel rims, higher heaped loads without clogging, larger stones passed.

The design also keeps the conveyor at a constant angle of elevation no matter how it is shifted. This permits higher and farther spoil discharge and simplifies the addition of truck-loading extensions to the conveyor.

Discharge speed can be varied, direction of discharge reversed and the entire conveyor shifted to either side without interrupting digging or trencher advance —all through levers at the operator's station. This feature is expected to reduce time required to get by poles, hydrants and other obstructions along the trench line.

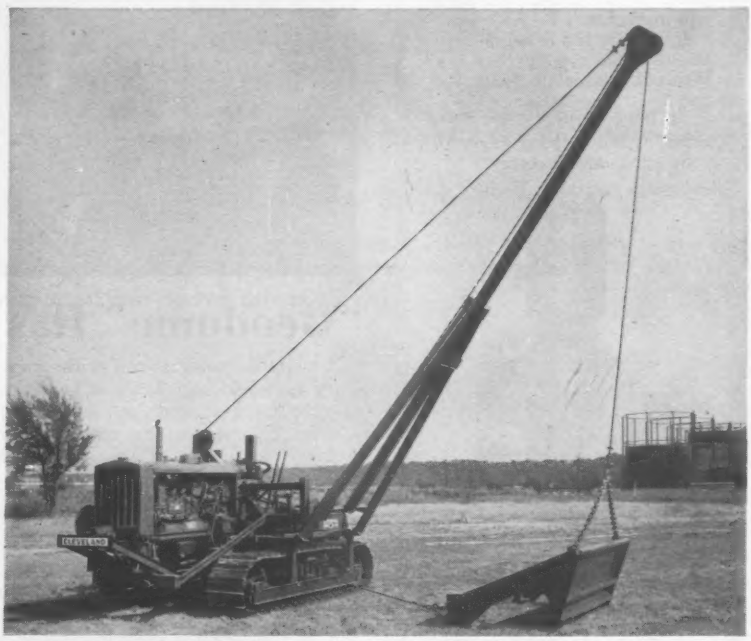
All four trenchers can dig to a depth of 5½ ft. The J-20, J-30 and JS-30 models each have a digging width of 11-24 in. and the J-40 has a digging width of 15-30 in.

JS-30 has these extra features:

Its digging wheel can be shifted 30 in. to either side of the machine's centerline to position the wheel behind either crawler or at any point between them. Shifting is under lever control from the operator's seat. The wheel-positioning feature permits trenches to be dug flush with curbs or other parallel edges, and can produce a trench more than 6 ft wide without moving the crawler tracks.

The digging wheel on the JS-30 can be tilted as much as 6½ deg to either side of vertical, again from the operator's seat. This adds up to 7½ in. to the outside cut of the wheel.

An hydraulically raised and lowered crumbing shoe is another JS-30 innovation. The shoe pivots back and up above the wheel so that the wheel can



IMPROVED BACKFILLER features water-cooled throw-out clutch and boom hinges raised above crawler tracks.

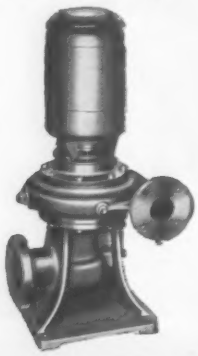
Engineers have the word for dependable pump service

WEINMAN

In municipal and industrial sewage pumping, pump performance is measured in years of trouble-free service. That's why you find the trend to Weinman Type U-M and U-VM pumps. These dependable non-clog pumps handle sewage, industrial by-products, semi-solids, heavy liquids, liquids containing solids and wastes without stress or strain. They stay on the job year after year—down time is minimized.

Weinman's non-clog, enclosed-type impeller is scientifically designed to produce a steep head capacity characteristic. There's no clogging—even when the going is tough. This is an important reason why Weinman Type U non-clog pumps have a record of efficient operation and low running and maintenance cost. Combined with their surprisingly modest purchase price, it's easy to see why a Weinman pump is first choice on more and more new jobs.

It will pay you to get all facts about these top performers. Write for Bulletins No. 1400 and 1410. Or, call your Weinman Pump Specialist. He's listed in the Yellow Pages of your telephone directory.



WEINMAN PUMP

290 Spruce St. Columbus, Ohio

CENTRIFUGAL SPECIALISTS

be set to desired trench depth without requiring clearance for the shoe.

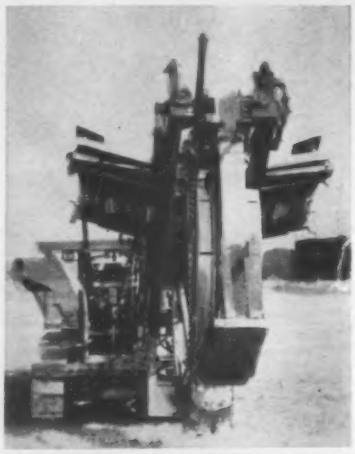
The J series trenchers are additions to the company's line. They do not replace existing units.

Cleveland also showed its distributors some new changes in existing machines.

Its Model 240 trencher—with a digging depth of 6¼ ft and digging width of 20-36 in.—now is equipped with the same V-type conveyor as the J series.

The Model 190 backfiller is now fitted with a water-cooled throw-out clutch. A jacket around the clutch drum is fed water from the cooling system of the backfiller's engine. Heat produced by repeated application and slipping of the clutch is efficiently dissipated and overheating of the clutch is prevented, the manufacturer says.

Another improvement cited for the backfiller is side-boom hinge-points raised 6 in. above the crawler track. This is said to provide more control and accuracy in throw-out and better control of the board in back-filling rocks, boulders and gumbo. It also keeps the boom hinges out of muck, mud and water. CLEVELAND TRENCHER CO., CLEVELAND, OHIO.



FRONT VIEW shows V-shape of conveyor, digging wheel shift and tilt.

"Geodome" Has Inflated Walls

A portable housing unit with pneumatic walls can be inflated in five minutes to form a rigid, self-supporting, load bearing structure, the manufacturer reports.

The structure is supported by pneumatic panels of neoprene coated nylon fabric, less than three inches wide. The panels are inflated simultaneously, but maintain pressure individually. Once the unit is erected the air pump can be disconnected, and windows and door can be kept open if desired.

The "Geodome" is a pneumatic application of the geodesic principle of equalizing stresses. It is light enough for two men to lift, yet reported to be sturdy enough to withstand winds of up to 120 mph and snow loads up to 30 lb per sq ft. Deflated, the unit can be folded to fit into a jeep or station wagon.

Two models currently are in production. One has a 16½ ft diameter, 8.3 ft center headroom and 218 sq ft of floor area. The second has a diameter of 48 ft, 24 ft headroom and 1,810 sq ft floor area. BERGER BROTHERS CO., NEW HAVEN, CONN.

(*New Products continued page 80*)

HAVE RIG- WILL DIG...

Digging, however, is only one of many jobs for this Marion 43-M. Its happy owner assigns it on a "go almost anywhere, do almost anything" basis. And he likes the results, both in terms of work done and profits earned.

A typical season's work includes swinging a concrete bucket, driving piling, setting steel plus a variety of other crane, drag and clam assignments.

Long, wide crawlers let this Marion travel and work in soft footing. It converts easily in the field. It's ready for rail or carryall travel in a jiffy, and when it goes on the job, work begins to move.

Think big when you look at this Marion—it can do big things for you.

TODAY'S MARIONS GIVE YOU MORE IN SUSTAINED, LOW COST PERFORMANCE

CHINE	Shovel Capacity	AVAILABLE AS . .			
		Hoe	Crawler Crane	Truck Crane	Special Crane
5-M	¾	Yes	Yes	Yes	—
3-M	1	Yes	Yes	Yes	—
62	1½	Yes	Yes	—	Yes
3-M	2½	Yes	Yes	—	Yes
01-M	3	—	Yes	—	—
11-M	4	—	Yes	—	—

You get **MORE** *with* **MARION**

MARION POWER SHOVEL CO. • MARION, OHIO

A Division of Universal Marion Corporation

Send me information about MARION ..... yard shovels, ... yard hoes and ..... ton cranes (☐ crawler mounted ☐ truck mounted).

☐ Have a salesman call.

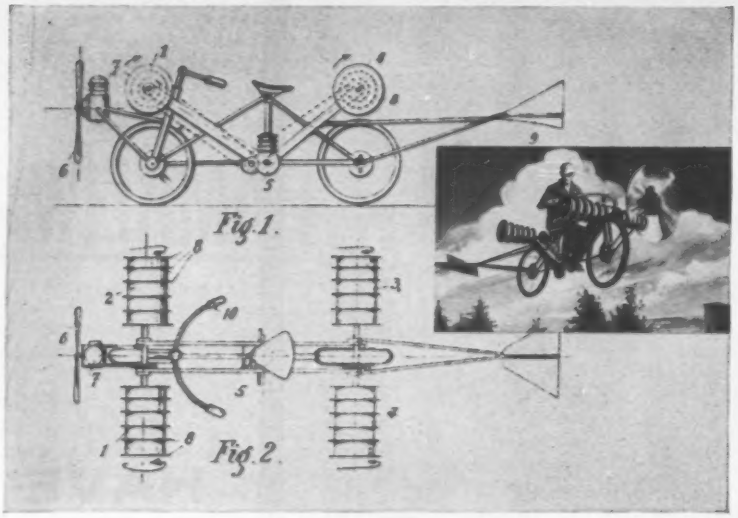
Name ..... Title .....

Company .....

Street .....

City ..... Zone ..... State .....

MARS outstanding design **SERIES**

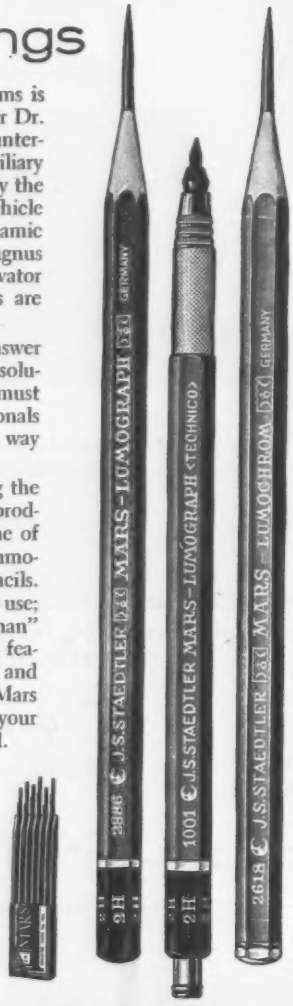


flight without wings

Getting over, rather than around, traffic jams is easy, with this flying motorcycle, says its designer Dr. Manfred Mannheimer, of Newark, N. J. Encountering heavy traffic, it quits the ground. An auxiliary motor rapidly rotates four cylindrical "wings." By the action of the "Magnus effect" these lift the vehicle into the air at 15 mph with 70 hp. The aerodynamic principle involved was discovered by Gustav Magnus in 1858. The cycle's tail-end has a rudder and elevator fin for steering during flight; the rotary wings are telescoped for surface travel.

Whether or not this design will be the answer to traffic congestion, it certainly is an ingenious solution. Aloft or aground, all engineering solutions must originate on the drafting board. And only professionals know how the best in drafting tools smooths the way from dream to practical project.

In pencils, of course, that means Mars, long the standard of professionals. Some outstanding new products have recently been added to the famous line of Mars-Technico push-button holders and leads, Lumograph pencils, and Tradition-Aquarell painting pencils. These include the Mars Pocket-Technico for field use; the efficient Mars lead sharpener and "Draftsman" pencil sharpener with the adjustable point-length feature; Mars Lumochrom, the color-drafting pencils and leads that make color-coding possible; the new Mars Non-Print pencils and leads that "drop out" your notes and sketches when drawings are reproduced.



The 2886 Mars-Lumograph drawing pencil, 19 degrees, EXEXB to 9H. The 1001 Mars-Technico push-button lead holder. 1904 Mars-Lumograph imported leads, 18 degrees, EXB to 9H. Mars-Lumochrom color-drafting pencil, 24 colors.

J.S. STAEDTLER, INC.
HACKENSACK, NEW JERSEY

at all good engineering and drawing material suppliers

Concrete Lets Itself Out Of 4 Yd Hydraulic Bucket

Concrete is the power source for Blaw-Knox's 4 yd self-powered concrete bucket. The bucket utilizes the weight of the concrete load to generate hydraulic pressure for the opening and closing mechanism.

The bucket literally hangs on two hydraulic cylinders. Every time the bucket is set down, the cylinders, in effect, are recharged.

A valve is turned to open the bucket and released to close it. An auxiliary radio remote control system for opening and closing is available, making it possible for the operator to stand 75 to 100 ft away. BLAW-KNOX CO., 300 SIXTH AVE., PITTSBURGH 22, PA.

Smooth Dumping Assured For High Capacity Trailer

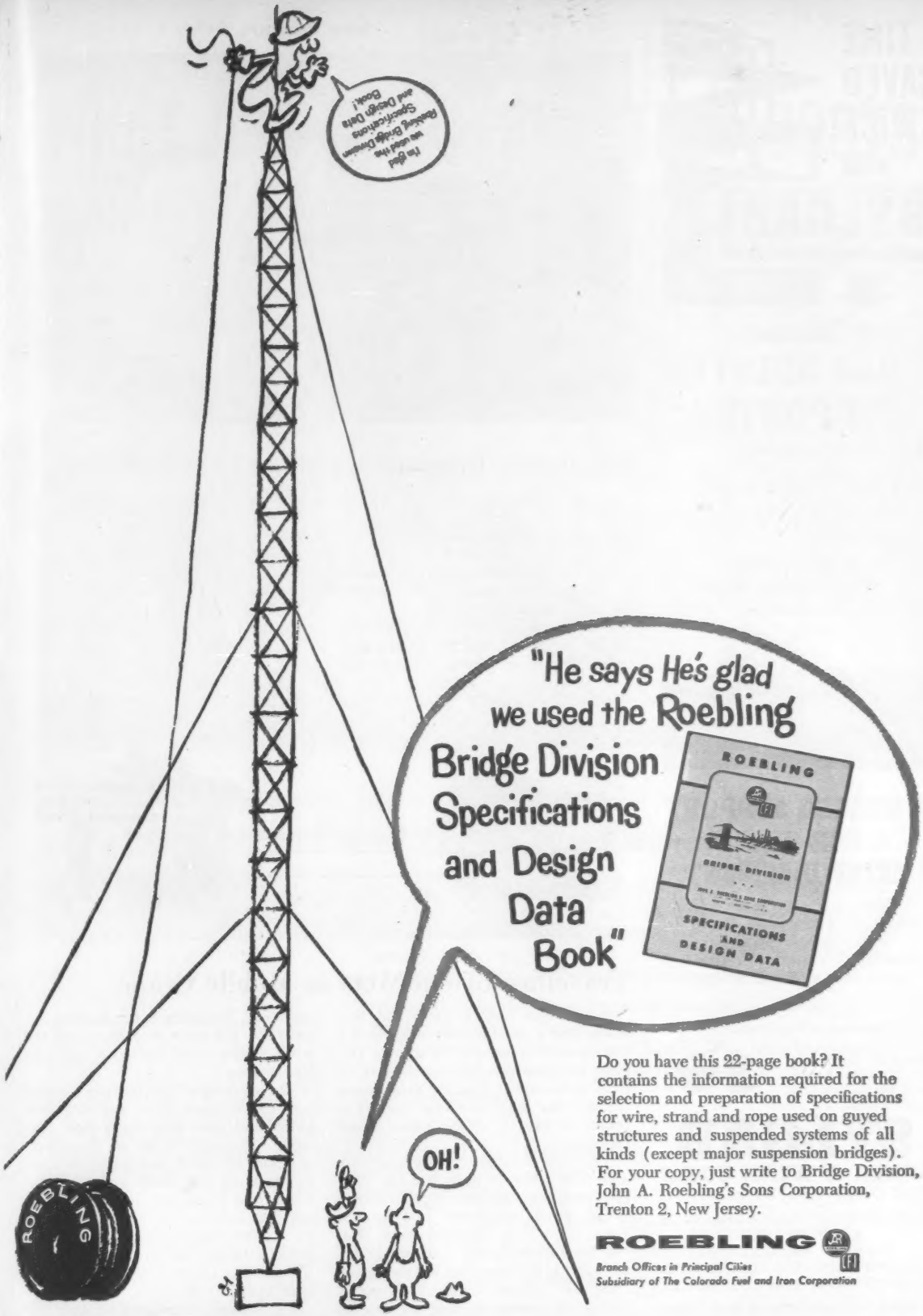
Maneuverability and smooth, controlled dumping are offered in the Model TS-1622, a rear dump, variable wheel base trailer. Rated capacity of the unit is 22 tons, based on material weighing 2,700 lb per cu yd.

The trailer is designed for use with the Euclid Model S-12 tractor. When in travel position, the rig can be turned within its 28 ft 8 in. length, says the manufacturer.

Dumping is achieved through a single state, double acting hydraulic hoist that is supplemented by a self-contained control device. The manufacturer claims the body will not slam while dumping or returning to travel position.

High strength, heat treated alloy steels are used in the body shell, spill plate and reinforcing members. Floor is of the dual, cushioned-sandwich type. EASTON CAR & CONSTRUCTION CO., EASTON, PA.

(*New Products continued page 82*)


I'm glad we used the Roebling Bridge Division Specifications and Design Data Book!
"He says He's glad we used the Roebling Bridge Division Specifications and Design Data Book"
ROEBLING
BRIDGE DIVISION
SPECIFICATIONS AND DESIGN DATA
OH!
ROEBLING

Do you have this 22-page book? It contains the information required for the selection and preparation of specifications for wire, strand and rope used on guyed structures and suspended systems of all kinds (except major suspension bridges). For your copy, just write to Bridge Division, John A. Roebling's Sons Corporation, Trenton 2, New Jersey.

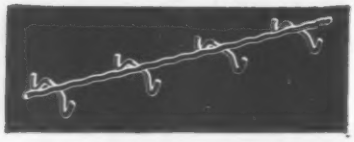
ROEBLING

Branch Offices in Principal Cities
Subsidiary of The Colorado Fuel and Iron Corporation

TIME SAVED TWICE! with SYLGAB

Continuous BAR BOLSTER SUPPORTS

1. The right material at the right time. No delays due to late delivery or mixed-up shipment.
2. Designed for speedy, easy installations. Allows fast pouring due to high rigidity.



A RUGGED SUPPORT FOR SLAB REINFORCEMENT

Made in 5' lengths of hard steel wire supporting bar with wire legs spaced either standard 5" distance or directly under each slab rod (4" min.)

•

Member Concrete Reinforcing Steel Institute

•

Manufacturers of Steel and Wire Accessories for Concrete and Fireproof Construction.

SYLGAB
STEEL & WIRE CORP.
79-05 Cooper Ave., B'klyn 27, N. Y.

BEAM CLIPS • SPECIAL COLUMN CLIPS
EXPANSIBLE CLIPS
STRAIGHT AND COIL WIRE
HAIRPIN CLIPS • TOGGLE HANGERS
FORM SPACERS • BAR ACCESSORIES

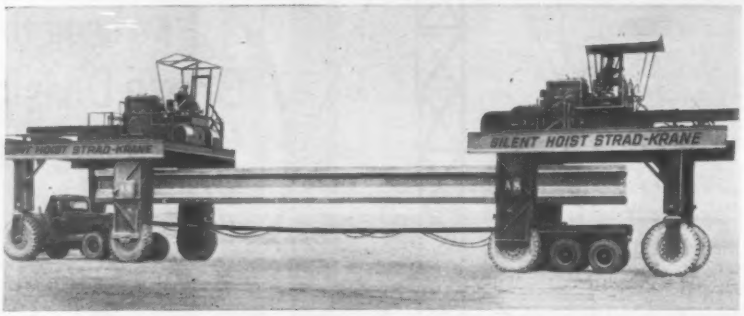
Request Catalog—Phone or Wire Collect

Pneumatic Compactors Made by New Firm

Newly established Eskridge Equipment Co. is building self-propelled, multi-tire pneumatic compactors in the 9 to 30 ton range and 9 to 15 wheel units. These vertical oscillating wheels are designed to produce equal compaction over terrain.

The 13 wheel, 30 ton roller weighs 16,000 lb without ballast. Ballast may be water, sand or gravel. With its full hydraulic steering and six-wheel rear drive, the machine has a 26 ft turning radius, the company says.

Tires are 9:00x20, 10 ply compactor tires. A sprinkler system keeps the tires moist when working on warm asphalt. The unit comes with wheel mats over each wheel. ESKRIDGE EQUIPMENT CO., 1214 S. NORWOOD AVE., TULSA 12, OKLA.



Traveling Bridge Acts as Mobile Crane

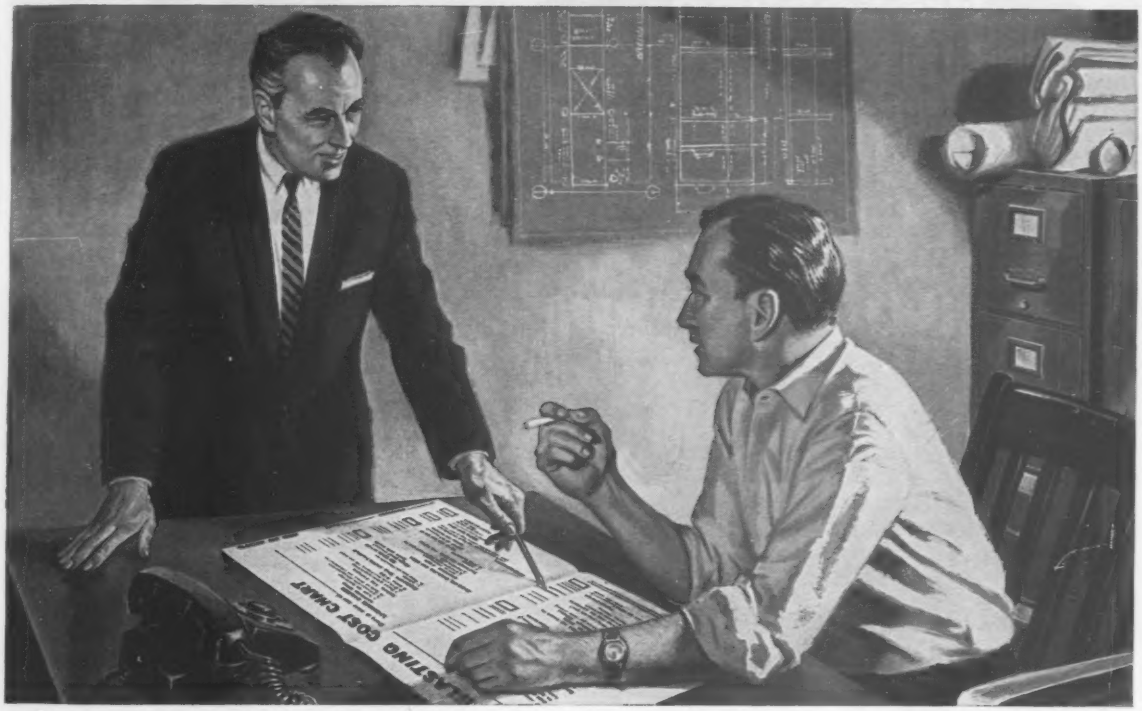
A unit that acts as both traveling bridge and a mobile crane represents a new concept in materials handling. The need for counterweights, stabilizers or jacks is eliminated since the Strad-Krane is not of the usual cantilever type. The center of load is always inside wheel supports.

The load is suspended from a hook under the frame of units and the hook can travel from one end of the machine to the other transversely and up and down, like a shop overhead crane. But the Strad-Krane is not confined to rail tracks; it is self-propelled on pneumatic tires and equipped with both power brakes and power steering for ease of operation. In addition, the hoisting element for the main hooklines and the power trolley works through a hydraulic transmission.

The equipment can transport loaded concrete hoppers, pour concrete into forms, and even strip forms from concrete. It is said to do all the chores of a fork lift truck and a mobile crane in unloading steel, cable and other material from trucks and freight cars. Inside clearances are 12 ft high and about 12 ft wide—large enough to straddle a truck or freight car. SILENT HOIST AND CRANE CO., DEPT. 169, 841 63RD ST., BROOKLYN 20, N. Y.

(*New Products continued on page 86*)

TRUE
WHAT ARE YOUR ^ BLASTING COSTS?



Get a complete profit picture with new, free Blasting Cost Chart! Let the Atlas Man show you how

Explosives costs alone don't always determine value of a blast. The explosives used have a direct effect on drilling, digging, hauling and crushing costs. Now, a free, simplified computing method—developed by Atlas, gives you a true, complete cost analysis of profits, without involved bookkeeping.

The Atlas Blasting Cost Chart enables you to protect or improve your profits. What's more, it's yours without cost and you can keep your figures confidential. The Atlas representative nearest you will be glad to show you how it works—without obligation.

EXPLOSIVES DIVISION
ATLAS POWDER COMPANY
WILMINGTON 99, DELAWARE *offices in principal cities*

NEWS about a bigger-than-ever

Presenting... 2 NEW CRANES

35-TON 435 TRUCK CRANE

Big, heavy-duty . . . with plenty of load-stability on or off-pavement . . . new Koehring® 435 truck crane safely lifts up to 35 tons, with 40-foot boom *at 15-foot radius* (based on 85% rating). Removable counterweight, boom, outriggers reduce weight well within highway load-limits.

Now, meet the new 3-axle 305 Cruiser (below) . . . one-man operated, self-powered, 25-ton crane, *with travel speeds up to 18 mph* . . . smooth torque-converter drive . . . automotive type power-steering . . . short 27 ft.-9¾ in. turning radius . . . 28% gradability. Boom lengths: 30 to 100 feet, *plus* 15 to 30 feet of jib!

25-TON 305 CRUISER® CRANE

Quick facts on KOEHRING WORK CAPACITY:

MODEL	TYPE OF MOUNTING	CRANE LIFT CAPACITIES (Rubber-tired machines rated at 85% of tipping load.)	
ON RUBBER			
205	3-axle truck, or 21.5 mph Cruiser	30,000 lbs.	at 12-ft. radius
305	3-axle truck, or 18 mph Cruiser	50,000 lbs.	at 12-ft. radius
435	4-axle truck	70,000 lbs.	at 15-ft. radius
545	4-axle truck	90,000 lbs.	at 15-ft. radius
	Size shovel	**CRANE LIFT CAPACITIES (Crawler ratings based on 75% of tipping load.)**	
ON CRAWLERS			
205	½ Cu. Yd.	20,000 lbs.	at 10-ft. radius
305	¾ Cu. Yd.	30,000 lbs.	at 12-ft. radius
405	1 Cu. Yd.	40,000 lbs.	at 12-ft. radius
545	(Crane only—85% rating)	90,000 lbs.	at 12-ft. radius
605	1½ Cu. Yds.	72,300 lbs.	at 12-ft. radius
805	2 Cu. Yds.	104,200 lbs.	at 12-ft. radius
1205	3 Cu. Yds.	190,000 lbs.	at 12-ft. radius

Extra lift capacity means . . . ***MORE WORK CAPACITY WITH ALL ATTACHMENTS***

Koehring fleet.....ON RUBBER

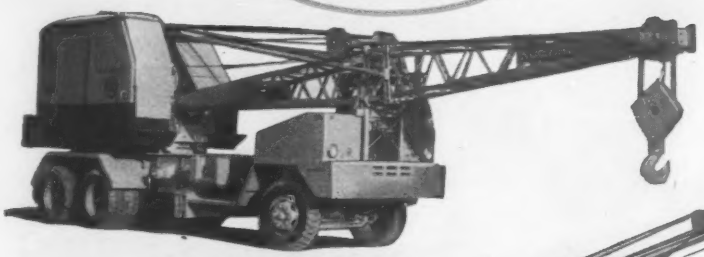
15-TON
205 TRUCK CRANE

Travel is unrestricted on Koehring 205 truck crane. Overall width, only 8 feet. Axle-load distribution meets highway regulations in most areas, even when carrying 25-foot boom over steering end. Work capacities: 15-ton crane, ½ to ¾-yd. clamshell or dragline, ½-yd. shovel, hoe.

One man controls all operations . . . one engine supplies all power for work-and-travel on Koehring 205 Cruiser (below). It drives job-to-job at *21.5 mph* (highway travel unrestricted). There's torque-converter on 4-wheel drive, automotive power-steering, 27½-foot turn radius, 30% gradability. Koehring 205 Cruiser has all standard attachments: clamshell, dragline, shovel, hoe.

15-TON
205 CRUISER CRANE

25-TON
305 TRUCK CRANE



Here's another heavy-duty, high-reach crane worth looking into . . . a truck-mounted 305, that raises up to 100 feet of main boom (or 130-foot boom-and-jib) *with low A-frame!* It's a 25-ton capacity crane with clamshell, dragline, shovel, hoe versatility.

45-TON
545 TRUCK CRANE

With this big, truck-mounted *545*, Koehring now brings you *45 tons* of lift capacity . . . *plus* quick conversion from fully-equipped machine to roadable machine.

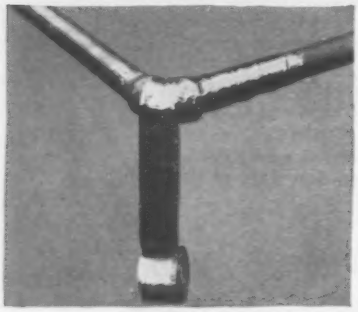
K029

Pick the size that suits YOU . . . then call Koehring distributor today for a demonstration.

KOEHRING DIVISION OF KOEHRING COMPANY
Milwaukee 16, Wisconsin

Koehring excavators and cranes also manufactured in: CANADA • ENGLAND • SPAIN • JAPAN

For True Economy... MEASURE PIPE PROTECTION WITH A CALENDAR!



Why Engineers Specify TAPECOAT ...The Quality Coal Tar Protection in Handy Tape Form for

Pipe	Tanks
Pipe Joints	Insulated Lines
Couplings	Splices
Fittings	Sprinkler Systems
Conduit	Bridge Crossings
Cables	Tie Rods

. . . in underground or under-water service

Since 1941, TAPECOAT coal tar coating in tape form has proved itself the best possible protection at lowest possible cost. Pipe and other surfaces TAPECOATED 17 years ago show no signs of deterioration—a record unmatched by any other type of tape.

Field application costs are lower with TAPECOAT because it is so easy to apply with the use of a torch. No tar kettles, technical know-how or special crews are required. TAPECOAT comes in rolls of 2″, 3″, 4″, 6″, 18″ and 24″ widths—sized to the job.

A TAPECOAT sales and service engineer is available at all times to assist you on any corrosion problem and on the various applications of TAPECOAT.

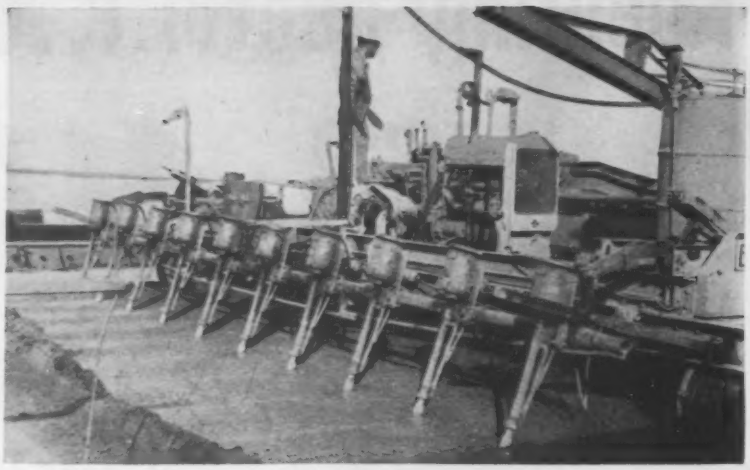
Write for illustrated brochure.

The **TAPECOAT** *Company*

Originators of Coal Tar Coating in Tape Form

1551 Lyons Street
Evanston, Illinois

Representatives in Principal Cities



Gang Vibrator Assembly Is Adjustable

A gang vibrator assembly comes complete with generators, hydraulic lift mounting frame, brackets and 2 hp electric vibrators. The rigs are designed to be attached to concrete spreaders for jobs that call for full depth internal vibration. Various combinations of vibrators, generators and mounting frames can be obtained for slabs from 12½ to 25 ft wide.

Each vibrator has a head 3x15 in. long that can attain 9,000 vibrations per minute. Hydraulic lifting bars remove the vibrators from concrete or hold them at any desired depth. For vibration only near forms, a hand lever arrangement is available that raises and lowers the vibrators at either side of the spreader. Stow Manufacturing Co., 19 Shear St., Binghamton, N. Y.

Shovel With Blower Cuts Snow Removal Time

Most unique feature of the "Michigan" Model 75A tractor shovel is a blower attachment that greatly speeds up snow removal. When there's no snow on the ground, the 1¼ cu yd shovel picks up earth, brush, rubbish and broken concrete. It digs pit-run gravel for landfill cover, loads stockpiled sand, gravel and stone. On highway jobs the shovel levels grades, spreads fill and tows equipment.

In winter, the operator replaces the bucket with an easy-to-mount 10 ft V-blade to plow alleys and streets. The four-wheel-drive machine has high traction tires and requires no chains. The "Michigan" can remove curb-windrowed snow from main traffic and business routes. Then the operator may replace the V plow with a Sno-Thro blower. This attachment blows 4 cu yd of snow into a truck in less than a minute. In undeveloped areas, the blower-equipped shovel tosses windrowed snow 40 to 50 ft away from the road. This eliminates the need for trucks or truck loading. Clark Equipment Co., PipeStone Road, P. O. Box 599, Benton Harbor, Mich.

(*New Products continued page* 88)

Workmen ready 60" O.D. wrought iron intake lines for rugged cross-country service

Corrosion-resistant Wrought Iron water lines need no protective coatings and wrappings

Wrought iron's unique built-in protection against corrosion eliminates the need for costly coatings and wrappings on underground water lines. It does its own job.

This built-in protection stems from a defensive network of over 250,000 glasslike iron silicate fibers present in each cross-sectional square inch of wrought iron. When corrosion attacks, these fibers quickly arrest any pitting or rapid penetration.

Wrought iron's relative immunity to corrosive soils and waters has been proved in actual underground service. And wrought iron's natural *elasticity* eliminates any chance of cracking during a soil shift or sudden jar in hauling. This also means less care required in backfilling and trench preparation. Saves time. Saves money.

Note: Now—from Byers Research—there's an even better wrought iron for modern corrosion control. New *4-D Wrought Iron* is available in tubular and hot rolled forms for your demanding engineering applications. Write for new 4-D Wrought Iron literature. A. M. Byers Company, Clark Building, Pittsburgh 22, Pennsylvania.

BYERS Wrought Iron Tubular and Hot Rolled Products

ALSO ELECTRIC FURNACE AMBALLOY STEEL PRODUCTS AND PVC PIPE AND SHEET

Corrosion costs you more than Wrought Iron

Steel strapping's ideal for jobs like holding these temporary supports in place.

Model 3A heavy-duty stretchers illustrated. Other models available for lighter duty or special use.

Model C heavy-duty sealers illustrated make it easy to apply seals to heavy-duty strap.

Model CU-25 cutters easily sever any strap, including 2" x .050". Other models available for lighter duty.

Use Signode steel strapping to speed and simplify tying, holding, handling

The tools are simple, rugged, dependable. The methods, as one user wrote, "are just common sense." Savings in concrete column form tying regularly run to about one-third over other conventional methods. But when you have Signode tools and steel strapping on the job, you can save on all these other jobs, and more:

- *Tying foundation wall forms*
- *Tying grade beam forms*
- *Tying forms for fireproofing steel beams*
- *Reinforcing of scaffolding*
- *Holding support timbers in place*
- *Bundling materials for loading, moving, handling...lumber, brick, reinforcing rod, wall panels, holding down machinery, etc.*

The Signode man near you can help you get the tools and strapping you need from the complete Signode line...can help you with methods if you wish. Call him today, or write:

STRENGTH TABLE—SIGNODE STRAP REPRESENTATIVE STRAP SIZES

Strap Size	Approx. Strength in Pounds	Approx. Cost per Foot*
⅝" x .020"	1,250	0.7¢
¾" x .023"	1,725	1.0¢
¾" x .035" HD	3,100	1.5¢
1¼" x .035" HD	5,000	2.4¢
1¼" x .050" HD	7,000	3.1¢
2" x .050" HD	11,000	5.0¢

*Zone 1, 1-Ton Prices

SIGNODE

SIGNODE STEEL STRAPPING CO.

2682 N. Western Avenue, Chicago 47, Illinois
Offices Coast to Coast.
Foreign Subsidiaries and Distributors World-Wide
In Canada: Canadian Steel Strapping Co., Ltd., Montreal • Toronto

Screws Are Key to Fast Unloading of Cement Car

The principle of screw conveyors is applied to the entire loading-unloading operation of the Rex Car Unloader. Used to unload cement from railroad cars into trucks, the new equipment is claimed to be 100% faster than systems using a screw with vertical bucket elevators; a 400 barrel railroad car can be unloaded in 40 to 50 minutes, a 10 ton truck loaded in 4 to 6 minutes.

Two screws do the work. A horizontal screw runs from under the car hopper to a transfer point. There a vertical screw takes over to convey cement up for discharge into a truck-loading spout.

Easy shipment and job setup are cited; the unloader can be made ready for service in a few hours. Power is supplied by a 60 hp gasoline engine. Screws are available in 9, 10, 12 or 14 in. sizes. Chain Belt Co., Construction Machinery Section, Milwaukee 1, Wis.

Small, Fast Photocopier Usable in Bright Light

A compact photocopy unit exposes, develops and prints copies of originals up to 15 in. wide and of any length in half a minute or less.

The Transcopy Meteor is designed for use under fluorescent or bright office lighting and can be plugged into standard electrical outlets. The photocopier measures 26½x15½x9½. Remington Rand Div., Sperry Rand Corp., 315 Fourth Ave., New York 10, N. Y.

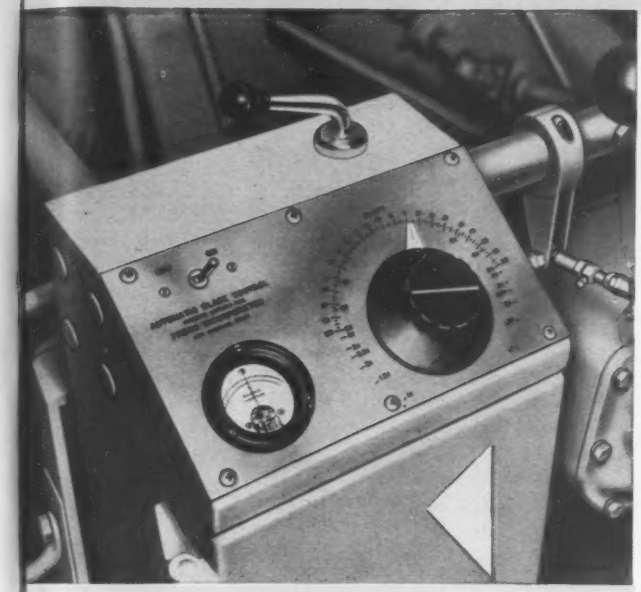
. . . New Products Briefs

• **Screw conveyor for bulk materials**—The new 4 in. "Flo-Tube" with round tube and belt drive puts automatic handling of bulk materials within the reach of the small as well as large user, the builder says. Each Flo-Tube is engineered according to length, incline,

JOB REPORT FROM NEVADA ON

AUTOMATIC BLADE CONTROL

–AVAILABLE ONLY FOR CAT MOTOR GRADERS!



JUST DIAL THE SLOPE ON THIS PRECO AUTOMATIC BLADE CONTROL...

...IT CONTROLS BLADE SLOPE WITHIN ⅛" IN 10', REGARDLESS OF TERRAIN!

From job after job, reports are coming in about the performance of the Preco Automatic Blade Control, a major feature introduced last year for exclusive use on Cat Motor Graders. How's it doing? Here's a typical answer from Superintendent Bill Hanson of Isbell Constr. Co., Inc., of Reno: "Work on finish is easier with the automatic control and is very accurate." His remarks are the result of work on a 9-mile, 4-lane freeway project near Carson City, Nevada. As for accuracy, controlling blade slope *within ⅛" in 10'* can be done!

More improvements for the No. 12

Though the No. 12 has earned the reputation of "standard of the industry," Caterpillar constantly looks for and finds ways to improve this machine. Automatic blade control is an example. Here are some other, even more recent improvements:

Longer main frame—a 4¾" longer main frame adds extra clearance between toe of blade and front tire for all blade positions.

Better visibility—31% more glass area in cab increases operator's visibility and efficiency.

Increased operator comfort—new seat adjusts fore and aft. Back rest adjustable, too. Cab 6" higher and cab roof insulated to reduce noise level.

Increased versatility—4" longer tandem provides plenty of clearance for chains even when machine is equipped with large 14.00-24 tires.

Have you seen the improved No. 12?

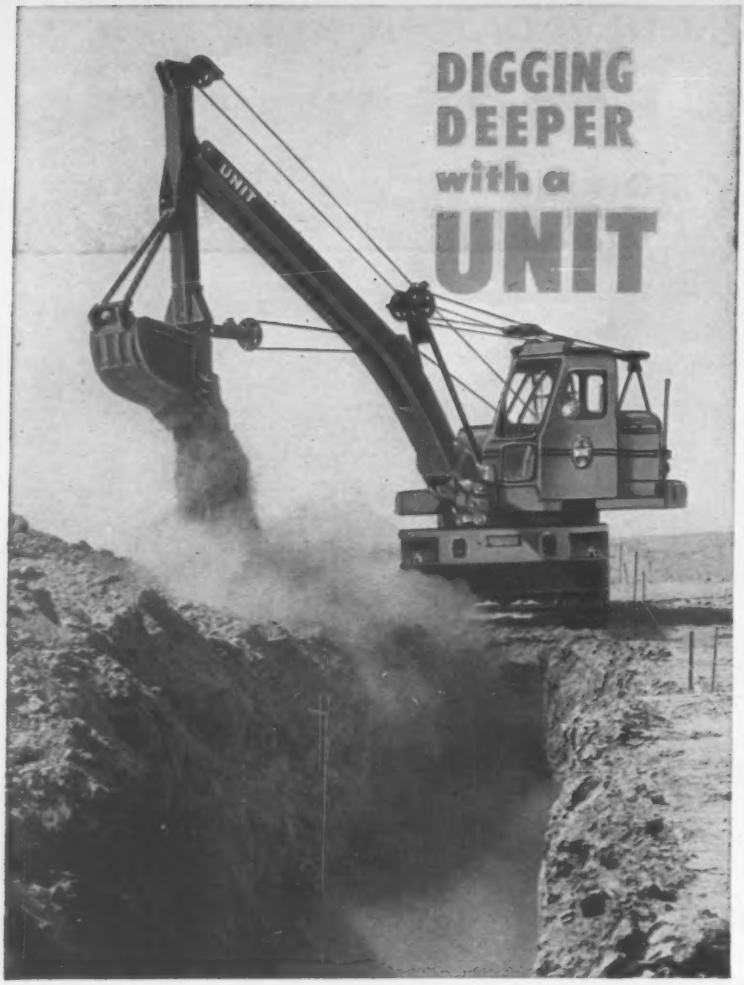
Because of these and other new features, you can count on the No. 12 for even better work—and faster. Look it over at your Caterpillar Dealer. Better still, look it over in action. Have him demonstrate a No. 12 equipped with automatic blade control. See for yourself how it steps up production!

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

CATERPILLAR

Caterpillar and Cat are Registered Trademarks of Caterpillar Tractor Co.

FOR HIGH PRODUCTION, EQUIP YOUR CAT MOTOR GRADERS WITH AUTOMATIC BLADE CONTROL



You'll Dig More Jobs At More Profit With A UNIT TRENCHOE!

Accurate deep digging of trenches for pipelines, sewers, water connections, footings, basements and culverts is easily and quickly accomplished with a UNIT Trenchoe. The "Goose-neck" boom with its long deep reach assures maximum production. Also saves time trimming vertical sidewalls and corners, and in leveling floor surfaces. Powerful... Compact... Perfectly Balanced. Every UNIT is designed to meet the most rigid demands. Investigate today and earn more pay.

UNIT models are available in ½ or ¾ yard Excavators . . . Cranes up to 40 tons capacity . . . Crawler or Mobile types . . . Gasoline or Diesel. Ask for literature.

UNIT CRANE & SHOVEL CORPORATION
6315 W. Burnham St. • Milwaukee 14, Wis., U. S. A.

Geared to Produce Maximum Knowledge

A 8056-2/3-C

material handled, and requirements necessary to best resist abrasive and corrosive action. They are operated by ½ to 1½ hp electric motors either AC or DC. CANTON STOKER CORP., 300 ANDREW PLACE, S. W., CANTON 1, OHIO.

• **Steel sandpaper**—Dragon-Skin, a flexible steel sandpaper, is sold in rolls 4½ in. wide, in lengths up to 1,600 ft. It is produced by punching 0.036 in. diameter holes, 150 per sq in., in 0.004 in. thick steel. RED DEVIL TOOLS, UNION, N. J.

• **Electric saws**—Two hand-held saws featuring all-ball-bearing construction are the #485 Speedsaw with 8 in. circular blade, and the #460 Speedsaw with 6½ in. circular blade. Both have retractable blade guards with lifter handles plus wing nut adjustments for depth and angle cutting. THOR POWER TOOL CO., PRUDENTIAL PLAZA, CHICAGO 1, ILL.

• **Whiteprint reproductions** — "Supertransline" is a new, low-cost emulsion for use in making positive intermediates and negatives for printing whiteprint intermediates. ANKEN CHEMICAL AND FILM CORP., NEWTON, N. J.

• **Wall and footing form**—Concrete footings and foundation walls may be poured at the same time with new EFCO Wall Footing and Sidewalk Forms, when used in combination with regular EFCO Form Equipment. The new forms also function as sidewalk forms or as edge stops for slab pours. ECONOMY FORMS CORP., BOX 128, HIGHLAND PARK STATION, DES MOINES, IOWA.

• **Self-tapping screw for thin gage metal sheet**—"Hi-thred" is a new sheet metal screw threaded full to the head with the last thread actually terminating in an annular orifice in the screw head itself. PARKER-KALON DIV., GENERAL AMERICAN TRANSPORTATION CORP., CLIFTON, N. J.

• **Impact wrenches**—Two new impact wrenches are available. Both are lightweight and rated at ¾ in. nut-setting capacity. Model 18B-7 has a ¾ in. square drive; model 18B-7S has a ⅜ in. built-in hexagonal slip chuck. Bulletin 18-11. GARDNER-DENVER CO., QUINCY, ILL.

• **Plywood adhesives**—A silvichemical extracted from tree bark helps produce a low cost, weatherproof, thermosetting adhesive for plywood. The chemical, designated as HT-20, is extracted from

232,081 FEET OF RAYMOND PILES

...support the New Orleans Causeway Boulevard Interchange

If you have been away from New Orleans for the past couple of years you would hardly know the place now. The Crescent City is expanding . . . broad, gleaming expressways are shooting out in all directions. And Raymond is there, driving the foundations to support these important arteries.

The famous 24-mile Lake Ponchartrain Causeway, North Claiborne Industrial Canal Bridge, Broad Street Overpass and Wisner Drive Overpass are among the recently completed highway projects resting on Raymond foundations. The newest job for New Orleans' traffic alleviating program is shown above—the Causeway Boulevard Interchange over Airline Highway. It rests on 2,834 Raymond Step Taper Piles. In addition, on a third contract, Raymond is driving piles for another section of the Greater New Orleans Expressway which will connect Causeway Boulevard with the Mississippi River Bridge now under construction. Incidentally, the Mississippi Bridge Approach also is Raymond-supported.

If you, too, are planning a new expressway system, a single culvert, bridge or overpass—any highway project no matter how large or small requiring a pile foundation, investigate the advantages and economies of utilizing Raymond's 61 years of experience. You are cordially invited to write for Raymond's new Highway Brochure which explains how Raymond can help you and the National Highway Program. Write Dept. E-11, or contact your nearest Raymond office.

FOUNDATIONS FOR THE STRUCTURES OF AMERICA

COMPLETE CONSTRUCTION SERVICES ABROAD

RAYMOND
CONCRETE PILE COMPANY

A Subsidiary of Raymond International Inc.

140 CEDAR STREET, NEW YORK 6, N. Y.

Branch Offices in Principal Cities of the United States, Canada, Central and South America

RAMSET fastens conduit and fixtures in new $20 million plant of Avco Manufacturing Corp. at Wilmington, Mass. Electrical contractor: Manzi Electrical Corp., Lawrence, Massachusetts.

Ineffective, off-brand fasteners with a high dud rate proved to be an expensive "bargain" for the electrical contractor on this job. He switched to *Austempered* RAMSET studs, and his fastening problems were over.

The general contractor and all subs but one chose RAMSET for the Avco job. All report that RAMSET was fastest, most economical for them.

RAMSET's 100-for-100 guarantee fixes your fastener costs—you pay only for the fasteners called for on the blueprint. If a fastener goes haywire for any reason, it will be quickly replaced . . . free!

For more than 10 years, RAMSET Powder-Actuated Fastening System has proved best for all jobs in concrete or steel. Its unwavering reliability, speed (up to 15 times faster than other methods) and accuracy are the real money savers on any job. RAMSET specialists can solve *your* fastening problems. Call your dealer today—he's listed under "Tools" in the yellow pages.

Ramset Fastening System
WINCHESTER-WESTERN DIVISION
OLIN MATHIESON CHEMICAL CORPORATION
12107-J Berea Road • Cleveland 11, Ohio

. . . New Products

the bark of western hemlock. It substantially reduces the amount of expensive phenol normally required in plywood adhesives made for exterior grade plywoods. RAYONIER, INC., 52 VANDERBILT AVE., NEW YORK 17, N. Y.

• **Cement tester**—Briquette Tester, CT-700-A, is a machine newly designed to meet the growing needs for portability, but still maintains the standards for testing as required by the ASTM, says the manufacturer. SOILTEST, INC., 4711 W. NORTH AVE., CHICAGO 39, ILL.

• **Stone cleaner**—A safe and convenient liquid chemical cleaning formula called K-35 cleans masonry or stone with the same results but none of the complications of sand blasting, according to the manufacturer. K&E CHEMICAL SALES CO., 129 PIERREPONT ST., BROOKLYN 1, N. Y.

• **Form tie**—A new break-back form tie called "Plasticone" is designed to produce a positive breakoff 1 or 1½ in. back from the surface of finished concrete. GATES & SONS, INC., DENVER, COLO.

• **Clevis fitting**—A clevis fitting, designed for fast, safe pendant connection on crane booms, is installed by placing through one thimble, and joining with pin to a solid thimble on the next pendant section. The lightweight connection reduces pendant vibration and rope flexing. CROSBY-LAUGHLIN DIV., AMERICAN HOIST & DERRICK CO., BOX 570, FORT WAYNE, IND.

• **Flooring anchored**—A galvanized steel clip anchors wood flooring to concrete floor decks. Its perforated embossed tabs are imbedded in the moist concrete floor deck, and its fold-down tabs are designed to be bent upright and accommodate "sleepers." BULL DOG FLOOR CLIP CO., DIV. OF NEW MONARCH AND STAMPING CO., 406 S.W. NINTH ST., DES MOINES 9, IOWA.

• **Tracing film**—"Duratrace," a new tracing film, is suitable for pencil, acts as a type-on master for whiteprint or offset reproduction and may be used to produce projectable transparencies for visual aids. It is non-yellowing, waterproof and has a high strength against tear. The film is available in 20 yd rolls 36 in. wide and in standard cut sheet sizes. OZALID DIV., GENERAL ANILINE AND FILM CORP., 15 CORLISS LANE, JOHNSON CITY, N. Y.

• **High-level lighting fixtures**—A new series of recessed troffer luminaires use high output lamps. They are available for 200 ft-candle level lighting and are

1935...wagon drills made hole drilling easy

The CP Tracdril thrives on hard work on tough terrain. The Tracdril tows its own compressor up steep grades . . . spots easily into position without "bull work." Hydraulic controls elevate the U-arm . . . set drill carriage angle . . . operate sliding cone for faster tramming and drilling. Takes on top-holes or toe-holes with equal ease. Two heavy-duty deep-hole drills now available: CP-400 DR, 4" cylinder bore, 2½" holes to 50 feet; and CP-450 DR, 4½" cylinder bore, 3" holes to 75 feet.

TODAY IT'S THE CP TRACDRIL

Chicago Pneumatic 8 East 44th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES • ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

JOINTS MAINTAIN THEIR SEAL UNDER ALL WEATHER CONDITIONS WITH...

SEALTIGHT Rubber-Asphalt Joint Seal maintains adhesion in hot weather . . . will not flow or extrude. Does not smear or track from tires.

Maintains adhesion in cold weather . . . will not crack or become brittle.

SEALTIGHT rubberized-asphalt compounds provide the ideal sealer for years of economical, trouble-free joints in concrete construction. They feature high resilient and adhesive properties and are able to maintain a bond at below zero temperatures. Will provide a positive seal in all types of monolithic construction. Designed for use with non-extruding type fibre expansion joints.

SEALTIGHT®

RUBBER-ASPHALT JOINT SEAL

RUBBER-ASPHALT JOINT SEAL compound available in both hot-pour and cold-applied types. SEALTIGHT Hot-Pour Rubber-Asphalt meets Federal Specifications SS-S-164 and CAA Specification P-605 . . . SEALTIGHT Cold-Applied Rubber-Asphalt meets Federal Specification SS-S-159 and CAA Specification P-615. Both are ideal for use in the joints of concrete streets, highways, bridges, etc.

JFR RUBBER-ASPHALT JOINT SEAL is recommended for sealing concrete runways where resistance to jet fuel is necessary. Available in Hot-Pour Type to meet Federal Specification SS-S-00167 and Cold-Applied Type that meets Federal Specification SS-S-00170. Easy and economical to apply.

TONGUE AND GROOVE Joint, used primarily as a longitudinal joint, provides a "keyed joint" that assures maximum efficiency in load transmission . . . helps to prevent blow-ups, spalling and controls cracking. Completely waterproof . . . produced from asphalt hardboard . . . is rigid, easy to handle and install, will not extrude. More economical and safer than steel center strips and will not rust away. Approved by Federal, State and Local engineering authorities.

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Write today for complete information on the above products plus information about the many other top-quality SEALTIGHT products for highway construction . . . ask for the "PAVING PRODUCTS" Catalog.

W. R. MEADOWS, INC.

16 KIMBALL ST. • ELGIN, ILLINOIS

designed to be completely integrated with ceiling construction. Standard lengths are 4, 6 or 8 ft with either a high-output 800 milliamp lamp, a VHP or PG 1500 milliamp lamp or two slimline lamps. LIGHTING DYNAMICS, 802 W. WHITTIER BLVD., WHITTIER, CALIF.

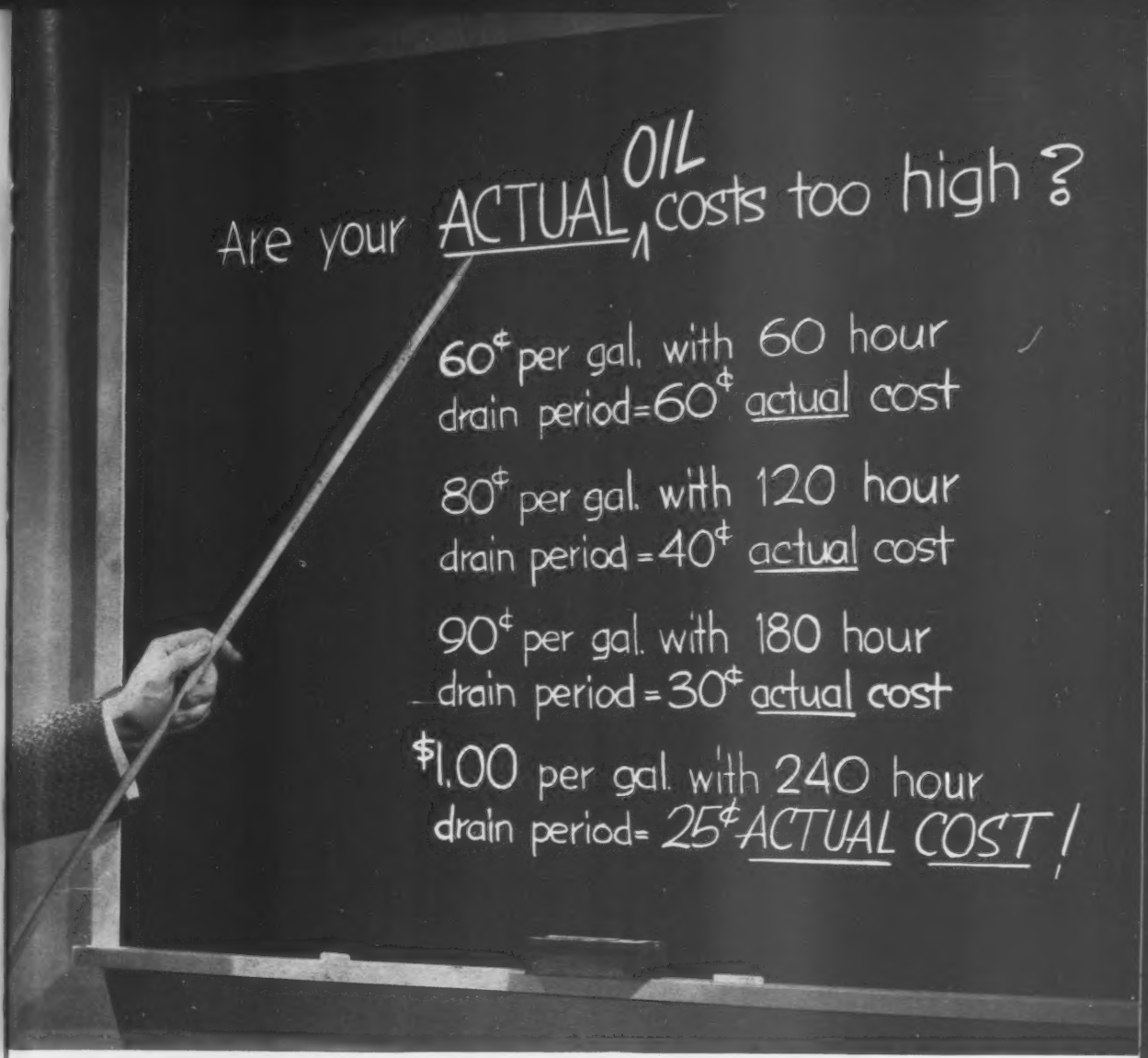
• **Stapling hammer**—The H5 hammer is lightweight for easy use, but heavy enough to deliver good driving force, according to the manufacturer. It is a one hand hammer, leaving the other hand free to position the work. The hammer uses a strip of 157 staples of 0.025 dia steel wire, in ⅞, ¼ and ⅞ in. leg lengths. BOSTITCH, 2005 BRIGGS DRIVE, EAST GREENWICH, R. I.

• **Insulated aluminum siding**—A "self-insulating" aluminum siding with factory-attached glass fiber insulation has been developed for use on both new and existing homes. "Rexalum Imperial" consists of an aluminum clapboard laminated to a fiber glass blanket and a coated aluminum reflective insulation sheet. CONSOLIDATED GENERAL PRODUCTS, INC., 24TH AND NICHOLSON STS., HOUSTON 8, TEX.

• **Concrete dispersant**—A plastic, new in its use in concrete, says the manufacturer, is combined with wetting and dispersing agents for sale as Acronite B&B in ready-to-use solution. Concrete made with the solution is reportedly water, oil and solvent proof. ACORN PAINT AND CHEMICAL CO., 8001 FRANKLIN BLVD., CLEVELAND 2, OHIO.

• **Roofing**—A new built-up roof made of glass fabric, asphalt and aluminum flakes has an extra-smooth surface and high tensile strength, says the manufacturer. Its reflective finish reduces face temperature, thus extending the life of the asphalt base, it is claimed. The roof is applied by either hot mopping or cold applications. TWINSBURG-MILLER CORP., TWINSBURG, OHIO.

• **Roof coating**—A pigmented aluminum roof coating has been introduced under the name Asbestolite M-44. It is composed of asphalt, waterproofing oils, long Canadian asbestos fibers and metallic aluminum flakes. When the material is applied, the aluminum flakes rise to the surface and leaf as the coating sets. Tests reportedly show that the coating turns back 71% of the sun's heat, reducing under-roof temperatures more than 20F within 10 minutes after Asbestolite M-44 is applied. THE MONROE CO., 10703 QUEBEC AVE., CLEVELAND 6, OHIO.


Are your ACTUAL OIL costs too high?
60¢ per gal. with 60 hour drain period=60¢ actual cost
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NEW 30-TON MOTO-CRANE MC-430

More capacity for the money. Take a look at the new Lorain 8 x 4 Moto-Crane Model MC-430. For no more cost than other 30-ton rated machines on 6 x 4 carriers, it will give you higher capacities at the radii where you work the most. It's the only 30-ton machine to give you 110' of standard boom (170' available). It provides you with a longer (180" wheelbase), heavier built carrier that's equipped with solid rocker beam front axle bogie. This rigidity, plus the two front axles, puts its lifting performance—particularly "on rubber"—in a class by itself. No ordinary spring-mounted front axle machine can match it. Fifteen speeds forward get you up to 47 mph, turnpike speed. Brakes on all 8 wheels. Ask your Lorain distributor for all the facts about the new MC-430.

All new carrier

Carrier features full length, torsion and deflection-resisting "box section" frame—a new development from the industry's oldest and leading designer of rubber tire cranes. Note the smartly styled cab and front grill. Other features include: hydraulic power assist steering, hi-traction differentials.

Shearball mounting eliminates adjustment and maintenance problems

This Lorain® exclusive gives the MC-430 a "ball-bearing," rock-steady swing. Over 60 hardened steel balls interlock two precision ground races to hold the turntable on the carrier. No center pin and nut, hook or top rollers. Results: longer life, less care. Three mounting positions on the carrier for best excavating or crane service.

Boom design cuts weight 20-30%

Lorain's exclusive square-tubular-chord boom is lighter, stronger—gives the new MC-430 a big lead in lifting capacities in the work zone. The main chords are of square tubing, the lacings of continuous round tubing welded at common points to the chords to create a strong "banding" effect.

Folding mast gantry simplifies travel

Standard on the 30-ton MC-430, this 14′ folding mast gantry permits carrying the basic boom over the front end without exceeding overall height of the cab. Changing pendant connections in links is eliminated. Operator simply uses power of machine for folding and re-erection. Removable counterweight lightens travel load.

FEATURES

RUGGED 8 x 4 CARRIER

LORAIN

THE THEW SHOVEL COMPANY, LORAIN, OHIO

No springs required on front axle bogie. Instead Lorain-designed Rocker Beam is used to provide extra rigidity for extra lifting capacity.

This 60-ton Manitowoc Model 3900 is setting heavy "I" beams for an overhead bridge deck in Kansas City, Mo. The rig is owned by J. S. Alberici Construction Co., Inc., and leased for this job to T. G. Borcus and Sons. Between leasing arrangements and company contracts, the Alberici firm keeps its six Manitowoc units working full time.

"Parts and maintenance average $25 a year," says owner of 6 Manitowocs

High Resale Value . . . Top Rental Demand Are Bonus Features

Since 1918 the J. S. Alberici Construction Co., Inc. of St. Louis has specialized in every type of industrial, commercial and governmental contracts. In addition to a healthy construction business, the company leases several of its rigs a good portion of the year. Currently, the Alberici firm is operating six Manitowoc cranes, including four 25-ton Model 2000's, a 40-ton Model 3000 and one 60-ton Model 3900.

LOW OPERATING COST

"Our first rig, a Model 2000, was purchased over 10 years ago," said Mr. Gabriel Alberici, President. "Since then we have used Manitowoc equipment exclusively. One reason is that for our entire fleet, maintenance and parts replacement costs average less than $150.00 a year, or about $25.00 per unit. This is certainly negligible expense for these rugged, hard working rigs."

HIGH TRADE-IN VALUE

Another important consideration which influenced the company's decision to run a "strictly Manitowoc" fleet is the high trade-in price each of these units carries. "After eight years of continuous operation, we traded in our original crane," Mr. Alberici continued, "and were allowed 50% of its original price toward the purchase of a new Model 3000. We know of no other piece of equipment that holds its value so well, is so low in maintenance, and free of costly upkeep."

EASY TO RENT

"Best of all, we are able to keep our units working at almost full time even though we do not have that busy a schedule. For example, our new 60-ton rig is a year old and we have been able to rent it for a total of 8½ months . . . using it for our own work the balance of the year. This rental arrangement simply wouldn't work with all makes of equipment. Some cranes, for instance, are impossible to rent. But the Manitowoc name is an *accepted standard* in the field . . . that's why there's always a high demand for our units."

Your helpful distributor can show you why operating a Manitowoc is like "money in the bank" . . . see him soon for full details on any of the eight dividend-paying models in the Manitowoc line!

Manitowoc

MANITOWOC ENGINEERING CORP.

(A subsidiary of The Manitowoc Company, Inc.)

MANITOWOC, WISCONSIN

CRANES	SHOVELS	DRAGLINES	TRENCH HOES
20 TON - 100 TON	1-YD. - 5½-YD.	1-YD. - 6-YD.	1-YD. - 2½-YD.

Publications

Heaters and devices catalog—New product information on pipe heaters, thermostatically controlled immersion heaters, 1 in. dia water immersion heaters, domestic water heater replacement elements, new ratings and configurations of tubular heaters. Also, information on unit heaters, soldering irons, soft metal welding pots, oven equipment and controls. Heating processes are described. Typical application problems are solved in a short form calculation adequate for ordinary requirements. Included are specifications, operating information and recommended list prices. 52 page Booklet GEC-10051. General Electric Co., Schenectady 5, N. Y.

Heat flow—Radiation of heat in buildings discussed with reference to "Infra" insulating materials. Infra Insulation, Inc., 525 Broadway, New York 12, N. Y.

Flexicore flooring—Precast concrete floor and roof systems with drawings and design data. 8 page 1958 catalog. The Flexicore Co., Inc., 1932 E. Monument Ave., Dayton 2, Ohio.

Mortar removal—Excess lime and mortar removal discussed. Berman Chemical Co., 1927 N. 12th St., Toledo 2, Ohio.

Testing apparatus—For concrete, soils, asphalt in highway and foundation construction. 128 page Catalog No. 1. Test Lab Corp., 2734 N. Laramie Ave., Chicago 39, Ill.

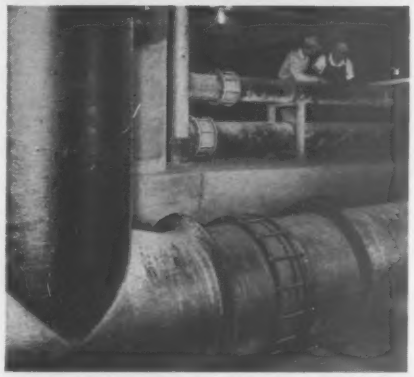
Pneumatic controls—Types, layouts and drawing designations of pneumatic controls. 28 page catalog, "Basic Pneumatic Control." Westinghouse Air Brake Co., Industrial Products Div., Wilmerding, Pa.

Composite design—Proceedings of seminar, with discussions and information on dust laying, its economies and safety. Calcium Chloride Institute, Nelson Stud Welding, Lorain, Ohio.

Tank seals—Lists advantages of the Horton Fabric Seal for floating roof tanks. 4 page brochure. Chicago Bridge & Iron Co., 2421 McCormick Building, Chicago 4, Ill.

Vibrating feeders—Descriptions, data and specifications for Syntron's 13 standard electromagnetic vibratory feeders; three standard air, oil or water-powered vibratory feeders; "heat-resistant" furnace feeders; dryer, preheater and cooling feeders; picking tables; con-

Joining pipe the Dresser way...

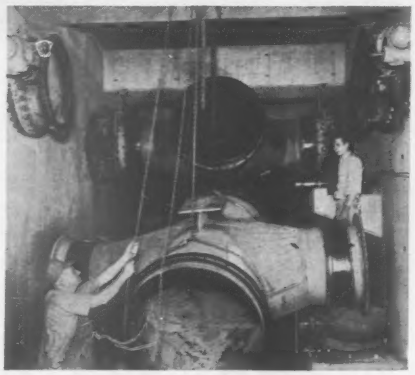


***Always* the easy way...**

The 8-inch, 10-inch and 30-inch Dresser-Coupled lines illustrated here are part of the system used in servicing the Clague Road's advanced rapid-sand type filters.

***often* the only way!**

This battery of steel crosses is in the new Clague Road Filtration Plant, designed by Havens and Emerson, Cleveland, Ohio. The Plant will carry a normal flow of 50-million gpd. Contractor: Hunkin-Conkey Construction Company.



Dresser® Couplings provide the essential leeway for bolting up cross flanges to valves in tight spots. They'll take deviation caused by settling concrete and remain bottle-tight . . . permanently! Dresser's vibration-proof properties protect valves and other expensive equipment, and protect the pipelines, too. With a Dresser Coupling, two man-minutes per bolt gives you a permanent, leak-proof joint that absorbs expansion-contraction movement, keeps maintenance problems to a minimum, and makes repairs easier if and when they do become necessary.

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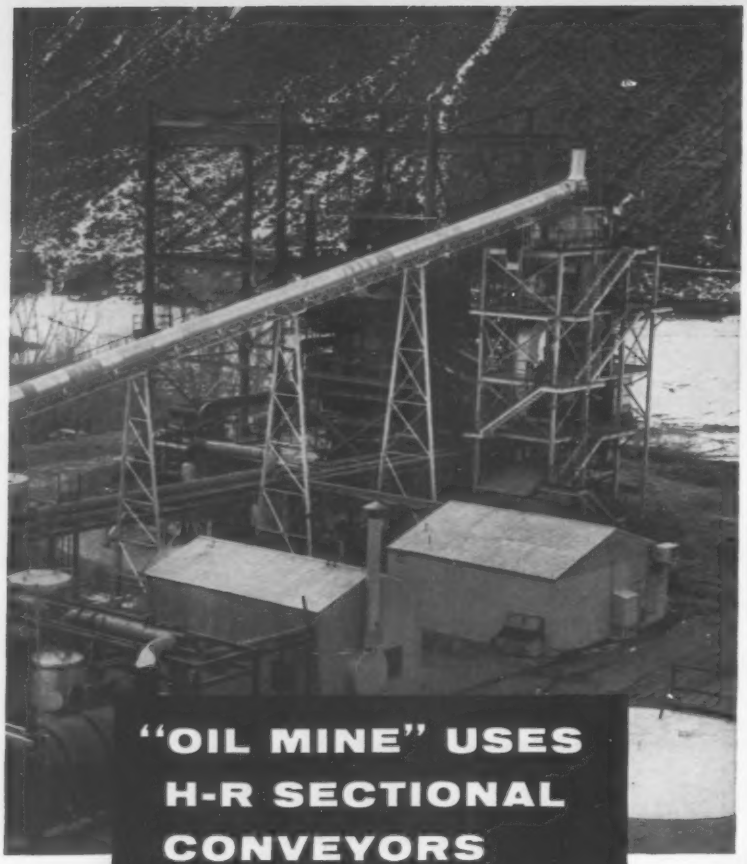

"OIL MINE" USES H-R SECTIONAL CONVEYORS

Oil carried by belt conveyors is one unique aspect of this experimental oil processing plant built in Colorado for the Union Oil Company of California by Stearns-Roger Manufacturing Company of Denver. Hewitt-Robins sectional belt conveyors are used to carry oil-bearing shale through crushing, screening, storage, and final extraction in an operation which may unlock reserves of a trillion barrels of oil. Because of standard design and interchangeable components, these H-R factory-built sectional conveyors are easily lengthened or relocated to give flexibility to the system.

These pre-engineered conveyors are designed to handle bulk materials from wood chips to lead ore at capacities up to 1000 TPH and speeds as high as 650 FPM. They are easily assembled in the field by your own men.

For information or service, contact your local H-R representative or Hewitt-Robins, Stamford, Conn.

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veyor feeders, and spiral elevator feeders. Typical installations and application diagrams. 30 page illustrated catalog. SYNTRON CO., 328 LEXINGTON AVE., HOMER CITY, PA.

Electric industrial truck—Complete dimensional and design data for the Elwell-Parker Model F-45T4, a 4,000 lb capacity electric-powered industrial truck. 4 page illustrated folder. ELWELL-PARKER ELECTRIC CO., 4205 ST. CLAIR AVE., CLEVELAND, OHIO.

Magnetic torque drive—Description of the "Whitney-Tormag Magnet Drive", with principles of operation. 8 page bulletin. SIDNEY CHAIN CO., HARTFORD, CONN.

Flow switch—Device that responds to flow of liquid in a pipeline to make or break an electrical circuit. Can be applied to light signals, sound alarms, start or stop motors, burners or metering devices up to pressures of 100 psi. Switches suitable for pressures up to 150 psi are of a waterproof design. Bulletin FS-1. MCDONNELL & MILLER, INC., 3500 N. SPAULDING AVE., CHICAGO 18, ILL.

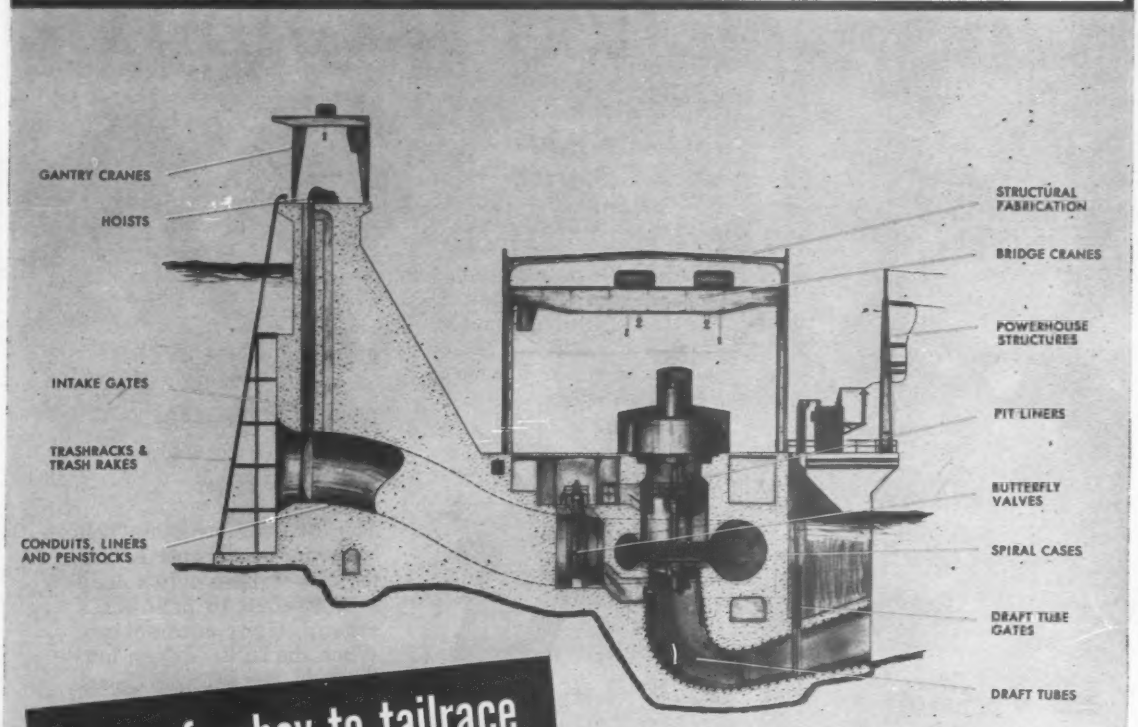
Aluminum electrical conductors—Listing of nearly 4,000 immediately available sag and tension charts for many types of covered and bare aluminum conductor. 88 page booklet. ALUMINUM CO. OF AMERICA, 1501 ALCOA BUILDING, PITTSBURGH 19, PA.

Groundwater control—For solution of seepage problems encountered in design and construction of earth embankments. "Cronese Slurry Trench Method for Groundwater Control." 8 page booklet. CRONESE PRODUCTS, INC., 102 N. BRAND BLVD., GLENDALE 3, CALIF.

Aluminum windows—Specifications and detail drawings of aluminum windows and hardware; including reversible, stationary, single or double hung, projected, and curtain wall types. 35 page booklet. ADAMS & WESTLAKE CO., ELKHART, IND.

Traffic signs—Information to expedite and simplify ordering on porcelain enameled highway traffic signs. Included are types, sizes, designs and prices. Accessories are also included. A 58 page supplement authorized by the California State Division of Highways contains technical data on sign specification requirements. State if supplement is wanted. CALIFORNIA METAL ENAMELING CO., 6904 E. SLAUSON, LOS ANGELES 22, CALIF.

HYDRO EQUIPMENT



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IN THE WEST

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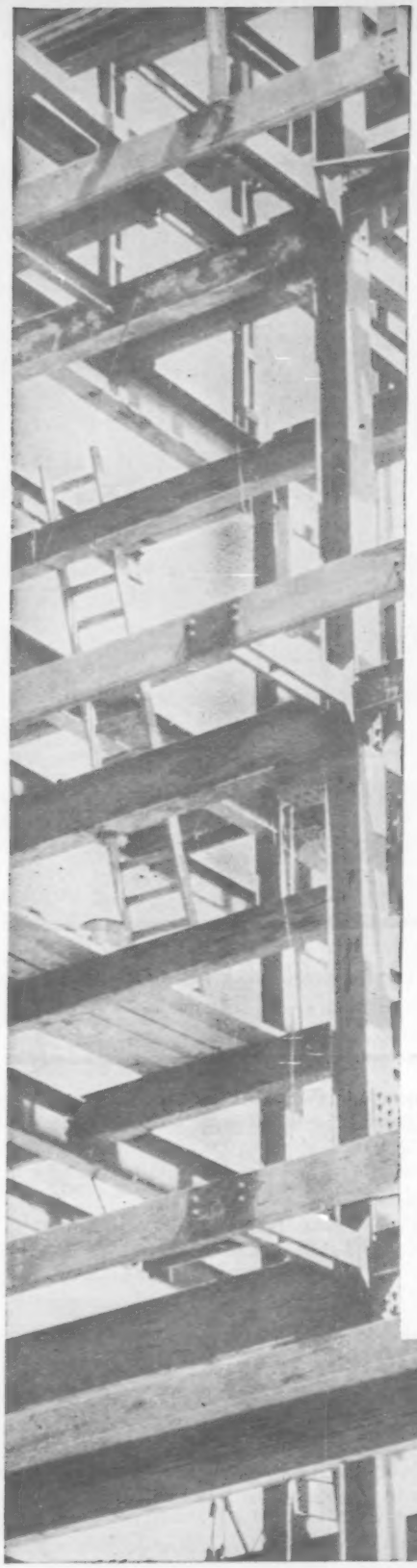
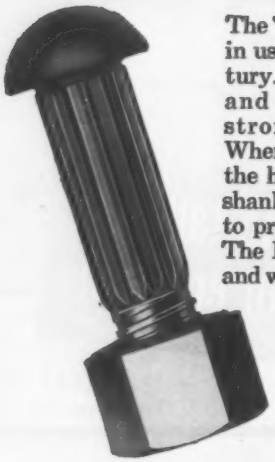


Lamson has

LAMSON
Dardelet Rivet Bolt



The "original" structural bolt in use for over a quarter century. It requires only a maul and wrench to produce a strong, tight connection. When the bolt is driven into the hole, the oversize ribbed shank splines are deformed to provide a body-bound fit. The Dardelet nut is spun on and when tightened, the locking threads of the nut and bolt provide a positive locked connection that can only be backed off with a wrench. No washer is required.

These Lamson structural fasteners are distributed by 19 United States Steel Supply Division Steel Service Centers in key locations throughout the country.

all three top performing structural bolts and nuts

LAMSON
High-Strength Structural Bolt

The A-325 and three radial marks on the head are the identification that this high-carbon structural bolt meets or exceeds rigid ASTM specifications. The "L" on the head identifies it as a genuine Lamson & Sessions bolt. Always look for these identifying marks and you'll always be sure you are getting genuine ASTM approved structural fasteners. This bolt is used with two washers and a nut made of high carbon steel to ASTM requirements.

LAMSON
Structural Nut

This is the nut that is used with both the Lamson High-Strength Bolt and the Lamson High-Tensile Bearing Bolt. The three long indented arcs on each end of the nut indicate that it meets or exceeds ASTM specifications. The short dashes inbetween the arcs identify it as a genuine Lamson nut.

LAMSON High-Tensile Bearing Bolt *

This new bolt assembly, made to ASTM A-325 specifications, is superior to, yet costs no more than Standard High-Tensile or Dardelet Structural assemblies. It is particularly well adapted for use in structures subject to dynamic or reversed stress loading and can be readily assembled by one man with conventional tools and equipment. It has high shear and bearing values because its knurled body fills the hole to make a joint in initial bearing. This body-bound feature, plus high strength characteristics eliminates the possibility of slip in joints and provides added rigidity and stability in the structural connection. Only one washer is required with the High-Tensile Bearing Bolt.

* PATENT APPLIED FOR

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HOT OR COLD
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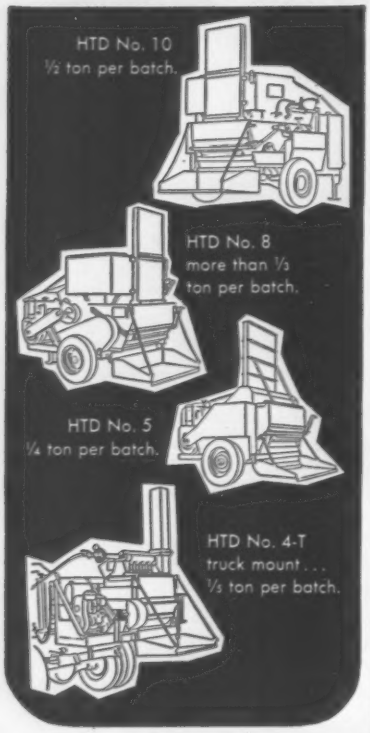

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3314 Cherry Lane, Fort Wayne, Indiana

Engineer Awarded $7,540 For Saving (U.S.) Army $6 Million

An engineer who saved the U. S. Army an estimated $6 million in construction costs received his reward last month. William E. Schaem, supervising structural engineer in the office of the Army Chief of Engineers, was presented with $7,540—the largest cash-incentive award ever given a civilian employee of the U. S. Army.

Mr. Schaem submitted an original proposal for an economical method of reinforcing rigid-frame concrete girders with high-strength steel bands. His suggestion resulted from a study of construction flaws found in several U. S. Air Force warehouses located throughout the country (ENR Nov. 10, 1955, p. 21).

A roof section of a rigid-frame warehouse collapsed in August 1956. Subsequent investigations revealed that serious cracks had opened during construction—or up to about two years later—in other Army warehouses of similar construction. The cracks appeared in regions of low bending moment near inflection points.

Possible causes for the failures were thought to be frozen expansion joints, unexplained volume changes in concrete, as well as the omission of stirrups and too-short longitudinal steel.

The government has been faced with the choice of tearing down the buidings or attempting to find some means of saving them. Mr. Schaem's suggestion will save the structures at relatively low cost.

Mr. Schaem is a 1931 civil engineering graduate of the University of Purdue. He started work with the Nashville District Corps of Engineers in 1935. In 1937 he was assigned to Cincinnati, and four years ago to Arlington, Va.

NSF Appoints Head For Engineering Sciences

The National Science Foundation has appointed Arthur H. Waynick program director for Engineering Sciences, Division of Mathematical, Physical and Engineering Sciences.

Mr. Waynick is on leave from Pennsylvania State University where he was head of the Electrical Engineering Department and director of the Ionosphere Research Laboratory.

Vaud Larson Assigned Post At Glen Canyon Dam

Vaud E. Larson has been named assistant project construction engineer for the Bureau of Reclamation at Glen Canyon Dam on the Colorado River. He led the first investigations crew into Glen Canyon 12 years ago and later recommended the site where the dam is now being built.

A 28-year veteran with the Reclamation Bureau, Mr. Larson is a 1930 civil engineering graduate of Utah State College. He has spent the last 16 years in project planning and studies of dam sites in Glen Canyon, Bridge Canyon and other areas throughout the Colorado River basin.

Careers

Public Works

E. J. Saldine retired September 30 after 32 years as industry contact engineer for the California Division of Highways.

Lee H. Huntley has resigned as chief engineer of the Brazos River Authority, Mineral Wells, Texas. He is retiring from active practice after 51 years in engineering.

Harvey W. Cassady has retired after 43 years as an engineer for the city of Indianapolis, Ind.

Capt. Riggo C. Bartelsen, of the Navy's Civil Engineering Corps, has been named resident officer in charge of construction at the Naval Air Station, Lemoore, Calif. Prior to this assignment, Captain Bartelsen was officer in charge of construction for a $285 million string of Air Force bases and naval air stations in Spain.

William F. Steuber, Director of Public Information for the Wisconsin State Highway Commission, has been promoted to special assistant to the chief state highway engineer, E. L. Roettiger. Mr. Steuber, an engineer, has won several literary prizes for his historical novels about Wisconsin.

Stop window breakage with flat panes of shatterproof Hetron and fibrous glass. They come precut, install like ordinary glass.

Meet code requirements with a material that's recognized as safe in locations where fire might be a hazard.

Save time on installation with big Hetron-based panels that require no special framing or sash, go up fast because they're so light in weight.

Wash out glare and shadows with light-transmitting areas that relieve eyestrain and fatigue, make your plant more productive.

Remember, not all polyester panels are fire-retardant. Hetron-based panels carry U/L label or Factory Mutual seal of approval.

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These daylighting panels *retard fire*

You can get safer plastic glazing now—with fire-retardant panels made of fibrous glass and Hetron® polyester.

These panels *won't support combustion*—can't contribute to spread of a blaze. They help you keep insurance rates low; meet stiffest code requirements.

At Factory Mutual Laboratories, commercial Hetron-based panels were ignited with a controlled gasoline-vapor fire in a 100-foot-long test building. Roof panels directly above the flames vented in four minutes. Temperatures dropped sharply. The test continued for half an hour—with virtually no further damage to the panels.

Hetron's flame resistance is chemically locked in—resulting in permanent safety. There is no loss of strength, because no additives are used.

These panels *resist corrosive fumes.* They're *shatterproof.* Rocks bounce off them. Blast shock, high winds, severe vibration have no effect on them.

You can get them now from leading fabricators. We make the Hetron resin that goes into them. When you buy, be sure to specify *Hetron-based panels,* or fire-retardant grade.

For a list of fabricators who can supply you, write us now.

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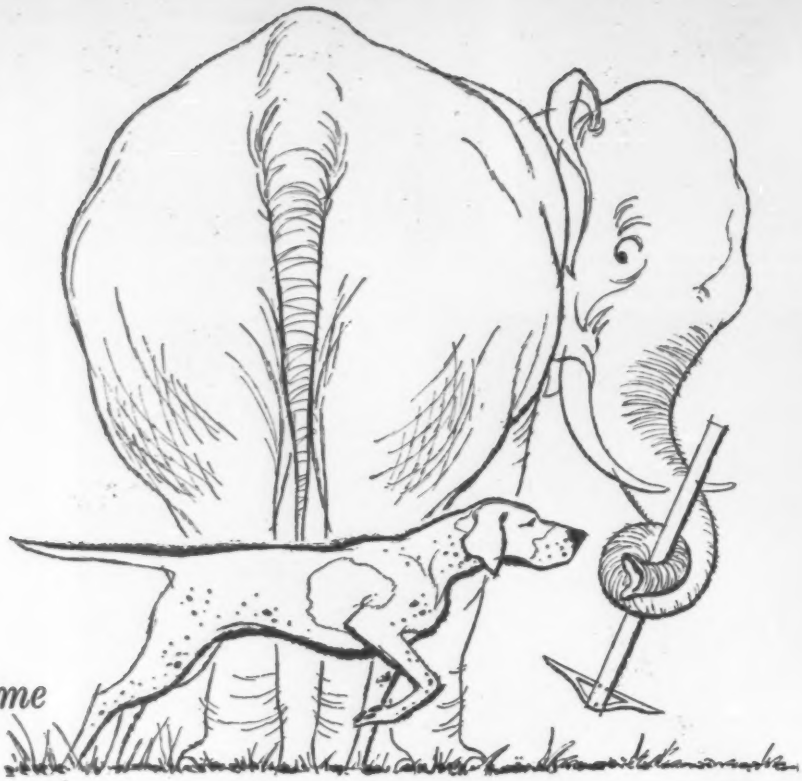

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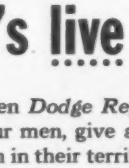

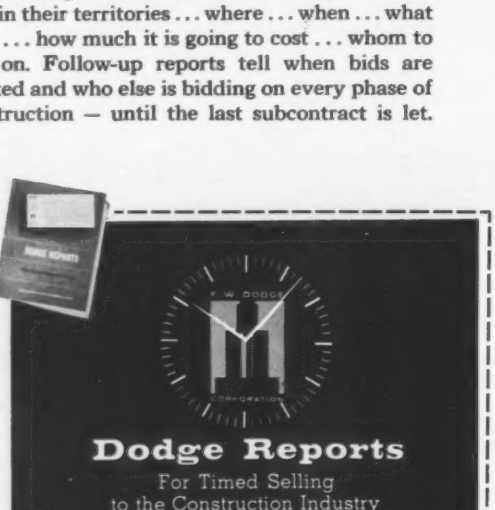

Obituaries

Joseph DiStasio Dies in Lift-Bridge Train Wreck

Joseph DiStasio, 68, partner in the engineering firm of DiStasio & Van Buren, New York City, died in the plunge of a commuter train off an open lift-bridge into Newark Bay, N. J.

Mr. DiStasio, an authority on reinforced concrete design and one of the pioneers in flat-plate construction, designed the U. S. Navy's largest reinforced concrete floating drydock. His firm currently is furnishing the structural design for 17 buildings in Brazil's projected new capital.

As an active member of the Reinforced Concrete Research Council, Mr. DiStasio directed preparation of designs for prototype multiple-panel flat-plate and flat-slab floors, now being tested at the University of Illinois. He also initiated a current study of behavior of buildings with low-strength-concrete slabs and high-strength-concrete columns.

Mr. DiStasio graduated from Columbia University as a civil engineer in 1913. He later became chief engineer for several New York firms and, in 1923, opened an office in partnership with Maurice P. Van Buren.

Paul R. Halbert, 55, president of Lone Star Pipe Line Constructors, Inc., in Dallas, Tex. He entered the pipeline construction business in 1926 and moved to Dallas the following year. He was associated with the Oklahoma Contracting Co. from 1927 to 1952, when he became president of the Lone Star firm. During his career, he supervised pipeline construction throughout the

(*Obituaries continued p. 109*)

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COLUMN A

Thousands of firms save thousands of drafting hours with STANPAT

STANPAT—the remarkable tri-acetate that is pre-printed with your standard and repetitive blueprint items, easily transferred to your tracings by an adhesive back or front. Relieves time-consuming and tedious detail of re-drawing and re-lettering specification and revision boxes, standard symbols, sub-assemblies, components and cross-sections. Saves hundreds of expensive hours of drafting time and money, frees the engineer for concentration on more creative work.

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Some of our longtime customers first called our attention to the "ghosting" problem. Certain tracing papers contain an oil which could be leeched out by the STANPAT adhesive (green back) causing a ghost.

THE SOLUTION

A new STANPAT was developed (red back), utilizing a resin base which did not disturb the oils and eliminates the ghost. However, for many specific drafting papers where there is no ghosting problem, the original (green back) STANPAT is still preferred.

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Send samples of your drawing paper and we will help you specify. Fill out coupon below:

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☐ Send literature AND samples of STANPAT.
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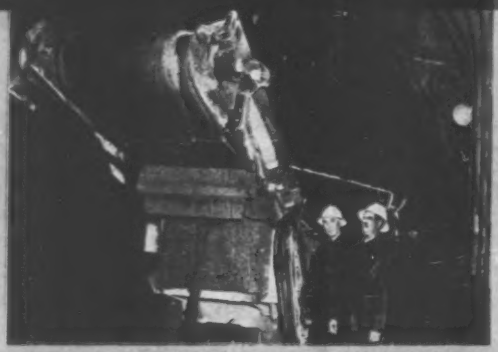

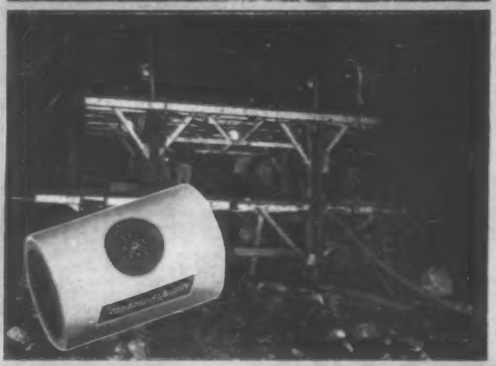

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These belts, developed especially for use on Conway Mucking Shovels, have demonstrated their record-breaking strength and stamina on most of the largest modern tunnel jobs. Typical example: The 7,042-ft. railroad tunnel at Bingham Canyon, Utah, where "Wear King" belts on some of the machines handled over 35,000 cu. yds. of excavated material without replacement.

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The hose which for many years has been the outstanding choice of contractors because of its reliable strength and safety on the most important jobs allotted to air hose—"Feeding" the jumbos, where a shutdown would affect not one but a number of drills; supplying air to caissons, where human lives are at stake; and as a main line to shovels in tunnel headings. Tube, carcass and cover are combined to form a super-strong hose structure that is virtually kinkproof and withstands continuous pressures, abrasive wear and hard knocks with unequalled efficiency. Sizes 1½" to 4", I.D. Maximum lengths of 50 feet.

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COATS, JACKETS, OVERALLS...in rubber, oiled and latex. Style 338 Coat is the contractor's favorite. Style 80 Jacket with Style 81 Overall makes the ideal shaft suit.

"SSS" TOE SAVER® BOOTS. Smooth, tough, flexible jet black rubber, heavy duck lined. Cushion insole. White cap over reinforced steel toe tested to withstand 2,000 lbs. pressure. Tire-tread soles. Hip, Storm King and Short. Permanently affixed size markings.

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John C. Guibert, 70, retired commissioner of public works in Nassau County, N. Y. His 36 years with the county included service as commissioner during Long Island's explosive growth after World War II. His most outstanding job was the planning and partial construction of the county's $250 million sewerage system. Mr. Guibert graduated from Columbia with a civil engineering degree in 1913.

Edwin Booth, 62, Maryland architect. He designed many buildings at the University of Maryland and at Maryland State College.

Lt. Gen. John C. H. Lee (USA ret), 71, World War II head of the Services of Supply in Europe. Although General Lee became best known as General Eisenhower's deputy commander in the European Theater during World War II, he began his military career as an engineer in the Panama Canal Zone. Later he worked on military surveys in Guam and the Philippines and on Ohio River dam projects. At one time he was aide to Maj. Gen. Leonard Wood, the Chief Engineer.

Henry A. Phend, 92, Columbia City, Ind., contractor, whose firm built many churches in the area.

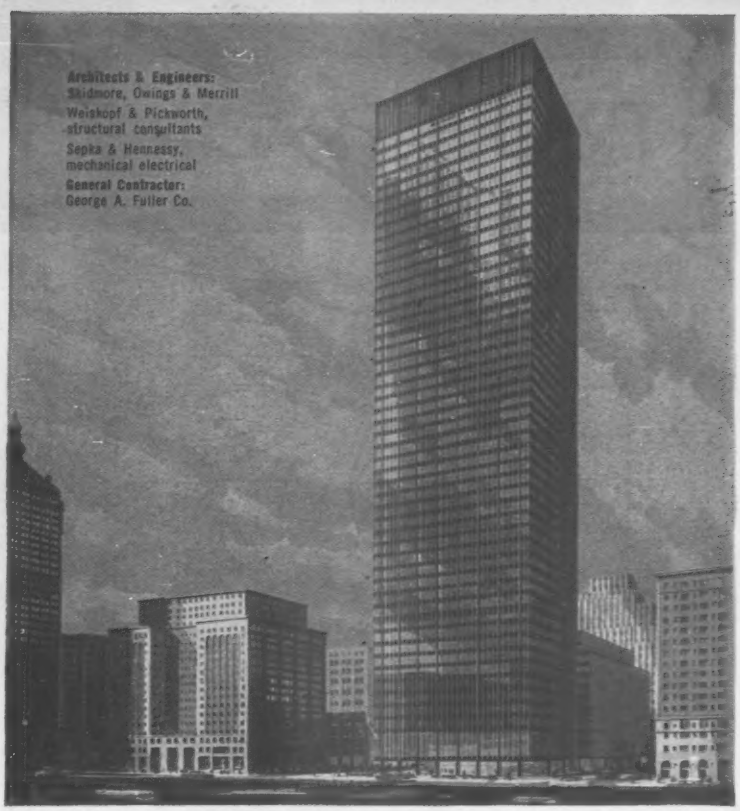
James H. Swaim, 63, Greensboro, N. C., building contractor and founder of Swaim Building Co. and Swaim Lumber Co.

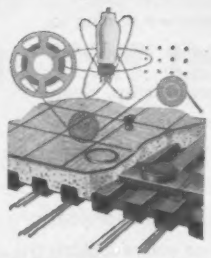
Frank D. Rideout, 78, a construction engineer for more than 50 years. From 1903 to 1947 he was a contracting engineer for the American Bridge Division of U. S. Steel Corp. at Pittsburgh, Buffalo and Cleveland. The following seven years he was a consulting engineer for Osborn Engineering Co., Cleveland.

Edwin W. Barbehenn, 58, director of public works and township engineer in Maplewood, N. J. He headed the New Jersey Association of Municipal Engineers at one time.

John M. Schaser, 41, civil engineer with the U. S. Bureau of Reclamation, Sacramento Region II. A graduate of Denver University, he was employed by the bureau for 20 years.

Henry W. Taylor, 78, a consulting engineer who practiced under his own name for over 50 years. Mr. Taylor's work was largely in sanitary engineering projects, and he was noted as an au-





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52-story Union Carbide Building will STAY modern with Milcor Celluflor — 900,000 square feet of it!

Today, offices use three times as much electricity as they did only 10 years ago. With the growing trend toward electronic office equipment, they're bound to use even more in the years ahead. That's why architects of the Union Carbide Building specified Milcor Celluflor.

It provides for complete electrification of floor areas. Cells spaced six inches o. c. serve as raceways to handle complex cable systems for power and communications. Outlets can be installed anywhere on the floor. They can be relocated or new ones added — or circuits can be changed — without costly alterations.

Electrical flexibility is just one advantage of Celluflor. Others include savings of steel, footings, construction time, and overhead. See Sweet's, section 2a/In — or write for catalog 270.

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It pays . . . in many ways . . . to specify Milcor Steel Building Products

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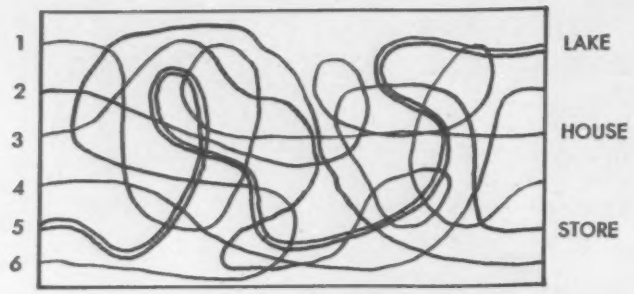
Can you trace the trail that leads to the store? See answer below.



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ARKWRIGHT
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. . . Obituaries

thority on incinerator design. His practice was in New York City until he moved a few years ago to Freeport, on Long Island, N. Y., where his office did design of a large portion of the multimillion dollar sewer program under way for Nassau County.

Stephen C. Whipple, retired senior hydraulics engineer for the State of California. He began his career shortly after World War I with the state's Department of Water Resources.

David F. Farley, 60, a civil engineer with the City of Philadelphia. A graduate of Villanova University, he was employed in the city's Department of Licenses and Inspection.

Wayne F. Davis, 53, assistant professor of civil engineering at the University of Oklahoma in Norman, Okla. He was formerly an engineer with the Oklahoma State Highway Department and the City of Oklahoma City.

Ivan M. Glace, 71, founder and retired president of Glace & Glace, Inc., consulting engineers, Harrisburg, Pa. He founded the firm in 1935 and headed it until his retirement in 1957. As an engineer, Mr. Glace was especially active in the sewage and water field.

Levi L. Hedgepeth, 59, a staff consultant in the Engineering and Construction Division of American Cyanamid Co., New York City, in Bound Brook, N. J. He was one of the men responsible for the multimillion dollar effluent plant Cyanamid dedicated in Bound Brook last June. Nationally known in the field of water and industrial wastes engineering, Mr. Hedgepeth joined the chemical firm in 1949. He had served as executive secretary of the Virginia Water Pollution Control Board from 1947 to 1949. Previously he had been chief of the Water Pollution Investigation Laboratory for the North Carolina State Board of Health.

Bayly Hipkins, 87, civil engineer, in San Francisco. He held construction and engineering jobs on various big projects in the West, including the Posey Tube between Oakland and Alameda, San Francisco International Airport and Grand Coulee Dam. Before going to the Pacific Coast in 1917 he was with Bradley Contracting Co. in New York City.

Hugh J. Phillips, 56, project manager for Seaway Railway Industries. An engineer specializing in railway construction, he was recently associated with Raymond Concrete Pile Co.

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can flow through the NEW Layne 134 shutter screen

WHY? *Increased inlet area!*

Here's a screen that is even more efficient ... has *greater strength* than the long-lasting Layne 96 shutter screen that made Layne water wells famous.

This new development of Layne creative research is used only in Layne water well installations, and available exclusively through Layne Associate Companies.

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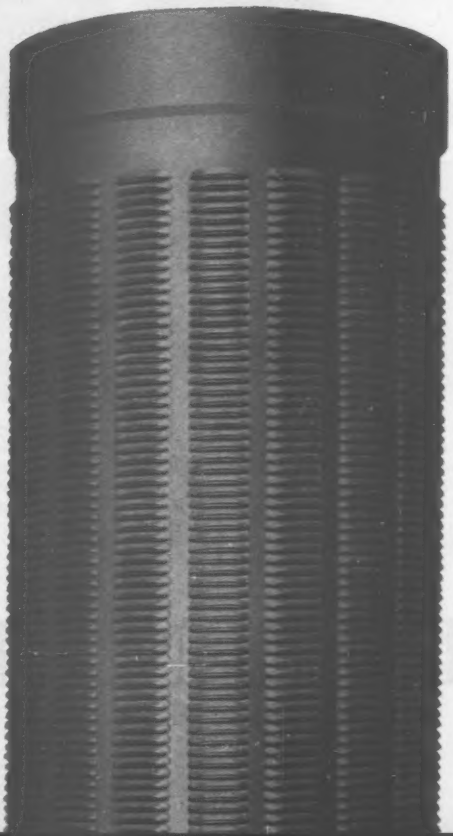

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You pick the job—drilling post holes for electrical transmission lines, on-the-spot maintenance, or pickup and delivery of men and materials—there's an INTERNATIONAL ready to help complete it quicker at least cost. Conventional or compact-design with three or six-man cab options. Dump, flatbed, stake, or specialized bodies, on single rear-axle chassis with GVW up to 34,000 lbs., to meet any requirement anywhere.

One truck has to lead the way in any construction operation . . . and here's the truck to do it. This husky INTERNATIONAL four-wheel-drive model is all-truck engineered to hustle men and up to a ton load to the job site with true short-stroke power and economy. What's more, with its exclusive INTERNATIONAL cab mounting and suspension system, the ride is smoother and easier whether you're tracking down the highway or off the road.

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You name it... You've got it!

from the world's most complete line of construction and road-building trucks

Where punishment is measured by the ton, you'll find an INTERNATIONAL like this model VF-212 taking more than its share. Within a full range of six-wheelers, you can choose a truck built to handle up to 90,000 lbs. GCW. Six-cylinder or V-8 gasoline or LPG engines, or diesels up to 335 hp. team up with extra-heavy-duty axles to *keep* big loads moving.

Need a dump truck in time to work on your present construction job?

Compact-design and conventional models ranging from 19,000 to 38,000 lbs. GVW, with up to eight-yard bodies, are ready for *immediate delivery* now from the INTERNATIONAL Truck Factory Inventory Pool. Call your INTERNATIONAL Dealer for details, today!

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Motor Trucks • Crawler Tractors
Construction Equipment • McCormick®
Farm Equipment and Farmall® Tractors

These Special Excavating Jobs Are Best Handled by Sauerman DragScrapers

Deep Digging

900-FT. SPAN—65 FT. BELOW WATER...

Load is deposited by tensioning the track cable, thus lifting the DragScraper from the pile. Tensioning continues to the desired height for releasing the DragScraper and returning it by gravity to the pit.

Operator controls digging and hauling from cab in head tower.

"the 10-yd. DragScraper is doing a wonderful job and we could not operate without it..."

Louis Chinelli, Gen. Supt.
Redman Concrete Corp.

Redman had been trucking material at a cost of $35,000 a year to the location where the DragScraper is now placing it. The 10-yd. Sauerman covers a pond area of 1500′ by 3000′ and is digging 40 ft. deeper than their previous dragline could operate.

The DragScraper digs and hauls on a 900-ft. span. It operates between a 90-ft. fixed head tower and a 40-ft. mobile tail tower which may be shifted to change the line of operation. The company's 1000-yd.-per-day batch plants and its fleet of mixers and trucks are kept busy by the steady flow of material supplied by the DragScraper.

High Bank Digging

175 FT. HIGH—600-FT. HAUL...

DragScraper digs from high bank.

Overall view shows height and steepness of bank. Diagram shows details of Sauerman installation.

"I have nothing but praise for our 4-yd. Sauerman Machine. Since the DragScraper began operations in 1952, we have worked it continuously 12 hours a day..."

John D. Robertson, Gen. Supt.
Chandler's Palos Verdes Sand & Gravel Co.

By working down from the top of the 175-ft. bank, the material flows ahead of the DragScraper. This provides bonus loads on each haul and substantially lessens the danger of cave-ins.

Operating cables are powered by a Sauerman three-drum electric hoist. Equipped for rapid shifting, the DragScraper can be quickly positioned to any line of operation between the two tail towers at the top of the bank and the headpost at the hopper.

The plant is the largest sand producer in the South Los Angeles area and, together with two ready-mix plants, keeps 22 ready-mix and 18 dump trucks busy.

The best Sauerman Machine for your plant is governed by the nature of the deposit, location of material, the depth and plant layout. Consult Sauerman engineers about your plant. Their recommendations will be based on fifty years of excavating machinery experience. Ask for Catalog A (DragScrapers). Sauerman News Nos. 149 and 150 describe the above installations in greater detail.

SAUERMAN BROS. INC. 632 SOUTH 28TH AVENUE • BELLWOOD, ILLINOIS

CRESCENT SCRAPERS • SLACKLINE and TAUTLINE CABLEWAYS • DURDLITE BLOCKS

Indemnity Clauses

Sub liable to general for death of a worker

A contract clause by which a subcontractor indemnifies a general contractor against damages for personal injuries is enforceable if clear and unambiguous. It may be broad enough not to require a casual connection between the injury and the sub's work.

A comprehensive discussion of the law appears in a federal court case started by Turner Construction Co. under these circumstances:

Turner had the general contract to erect an industrial building in New Jersey. It subcontracted the furnishing and erecting of the structural steel to Belmont Iron Works. The subcontract provided that the subcontractor would indemnify the general contractor against liability for personal injuries "growing out of or resulting from the execution of the work provided for in this contract or occurring in connection therewith." Belmont, in turn, subcontracted the erection part of the work to Ralph Cornell, Inc.

During performance of the steel erection subcontract, a structural steel worker (Hoyt) employed by Cornell fell through the roof of a partially completed section of the building and was killed. His widow brought suit against Turner and obtained a judgment of $50,000, together with the expenses of the litigation. The basis of the recovery was that Turner was negligent in failing to warn workmen on the job of the dangerous condition of the roof. Turner then brought an action against Belmont to recover the amount it had to pay, claiming that under the provisions of the subcontract, Belmont had agreed to indemnify Turner. It was granted a recovery.[1]

The court stated: "Although the parties are in agreement that there is no important difference in the law of New York, Pennsylvania and New Jersey upon the subject of the right to contract for indemnity against one's own negligence, it may be well to say that the law of New York governs the interpretation of this contract. The contract became effective and binding when Turner in New York, having received an executed copy by mail from Belmont in Pennsylvania, signed it and returned it to Belmont by mailing it in New York. This was the last act necessary to validate the contract. See McLouth Steel Corp. v. Mesta Machine Co., 3 Cir., 214 F. 2d 608. The term requiring Belmont to furnish certificates of liability insurance to Turner was plainly not a condition to its obligation under the contract.

"The general rule is that one may contract for indemnity against his own negligence, provided the contract makes it sufficiently clear that the parties so intended. 'The intention is the thing which must appear clearly and unequivocally, however, and the agreement need not contain express language referring to the negligence of the indemnitee.' Salamy v. New York Central System, 1 A.D. 2d 27, 146 N.Y.S. 2d 814, 817. In Turner Construction Co. v. Rockwood Sprinkler Co., 219 App. Div. 508, 293 N.Y.S. 551, the courts of New York held that this identical clause clearly manifested an intention to cover the contractor's liability for its own negligence.

"Belmont's principal effort to avoid liability is based upon the contention that the language of the indemnity clause, quoted above, limits the coverage to cases in which there is a causal connection between the doing of the work described in the contract and the injury, which, in the present case, amounts to saying that it would be liable only if Hoyt's death was caused by the fault of somebody engaged in the erection of the structural steel or by something or some place used in doing that work.

"Belmont points out that it had had nothing to do with the job of laying the roof, that it had no control of that part of the premises and was under no duty to warn Hoyt of the dangerous condition. All this is true, but I cannot agree that the element of causality, as Belmont defines it, is a necessary condition of its liability to Turner. There might be ground for the argument (though I do not so decide) if the clause had merely said injury 'growing out of or resulting from the execution of the work' and stopped there. However, the clause goes on 'or occurring in connection therewith.' Plainly, the parties meant to add something to the concept of an injury caused by or resulting from the work.

"Without attempting a definition of the phrase, I can say that in my opinion it includes an injury incurred by a workman, employed for the work contracted for by the indemnitor, in the act of leaving the premises at the end of the day's work."

(1) Turner Construction Co. v. Belmont Iron Works, 158 F. Supp. 309, U.S. District Court of Pennsylvania, July 30, 1957.

(*Legal continued page 116*)

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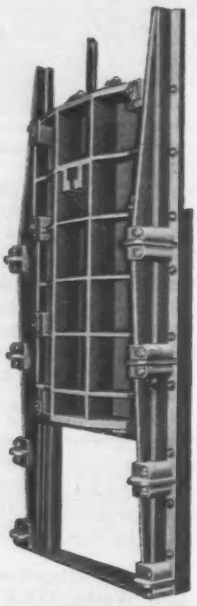

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Defects Not a Bar

Substantial performance is all the law demands

A contractor who has substantially performed his contract is entitled to recover the contract price. If there are some minor defects in the work, he may have to pay the cost of repairing them but he can't be forced to forfeit his compensation. This is known as the doctrine of substantial performance.

Here's how it works, according to a Pennsylvania court:

"The doctrine of substantial performance has been developed by the courts as an instrument of justice. Jacob & Youngs v. Kent, 230 N. Y. 239, 129 N. E. 889, 23 A. L. R. 1429. This court has always turned its face against forfeiture. We said in Morgan v. Gamble, 1911, 230 Pa. 165, 79 A. 410,414: 'The equitable doctrine of substantial performance is intended for the protection and relief of those who have faithfully and honestly endeavored to perform their contracts in all material and substantial particulars, so that their right to compensation may not be forfeited by reason of mere technical, inadvertent, or unimportant omissions or defects.'"

The court also stated that under Pennsylvania concept of the rule the presence or absence of good faith, that is, whether the breach was willful or merely inadvertent, is very important.

The court further ruled: "The Restatement of Contracts, Section 274, page 399, Subdivision (1) makes it clear that only material failure of performance by one party discharges the other. Section 275, pages 402-3 provides as follows: 'In determining the materiality of a failure fully to perform a promise the following circumstances are influential:

'(a) The extent to which the injured party will obtain the substantial benefit which he could have reasonably anticipated;

'(b) The extent to which the injured party may be adequately compensated in damages for lack of complete performance;

'(c) The extent to which the party failing to perform has already partly performed or made preparations for performance;

'(d) The greater or less hardship on the party failing to perform in terminating the contract;

(e) The willful, negligent or innocent behavior of the party failing to perform.'

"The reading of these rules, of itself, is sufficient answer to the contention of

Bulkhead and Anchor walls built with Steel Sheet Piling for Pier 1 in Brooklyn

Just south of the Brooklyn Bridge is the Brooklyn-Port Authority's new Pier 1, shown during construction. Solid fill construction is being used, with steel sheet piling used as a bulkhead wall at the water-side. A second sheet piling "deadman" anchor wall is connected by tie-rods to the seawall.

To be a large L-shaped structure, Pier 1 is expected to be completed in 1959. It will have 30-ft wide aprons, 256,000 sq ft of shed space, a 20 ft-wide loading platform to handle 80 trucks, and a 360,000 sq ft paved upland area. An existing pier is being incorporated into the overall plan of Pier 1.

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the appellants (owners). The appellants under this verdict will obtain all the substantial benefits that they could have reasonably anticipated; they can be adequately compensated for any injuries they complain of and the fact finding body has determined that compensation; the appellees (contractors) have very substantially completed their contract, so much so that the appellants have had the use of the completed property for several years; a discharge of performance would amount to a forfeiture; and the failure to perform in this case, if any, was certainly not wilful and might very well have been innocent."

(1) Schlein v. Gross, 142 A. 2d 329, Superior Court of Pennsylvania, June 11, 1958.

Partial Rescission

A valid contract change alter liability to sub

If the terms of a subcontract are changed by the mutual consent of the owner, general contractor and subcontractor so that the owner becomes directly liable to the sub for part of the work, the new agreement is enforceable. In legal terms, a partial rescission of the original contract has occurred.

An illustrative case is reported in Georgia. Facts are these:

The owner of a parcel of land entered into a contract for the construction of a building. The general contract called for electric wiring and the installation of electrical equipment as set forth in the specifications. The general contractor sublet the electrical work to another contractor.

Before the electrical subcontractor started work, the owner decided to make radical changes in the electrical work.

Thereafter, a conference was had between the owner, general contractor and the subcontractor for the electrical work and an agreement was reached whereby the subcontractor would perform the work in accordance with the revised specifications. The original contract was $1,798. Under the new arrangement the general contractor was to pay the subcontractor the sum of $1,798 and the owner was to pay the subcontractor for the increased cost of the work resulting from the changes.

After the new arrangement was made, the electrical work was completed and the general contractor paid the sub the amount called for by the original contract, that is, $1,798. The actual cost of performing the work was $4,495.27. The electrical contractor presented the owner with a bill for $2,495.27, which represented the increased cost of the work resulting from

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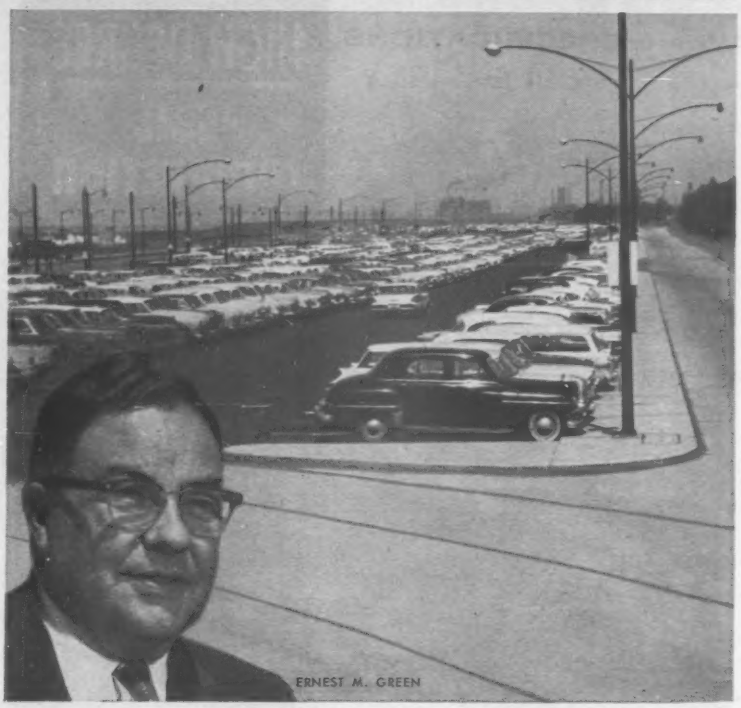

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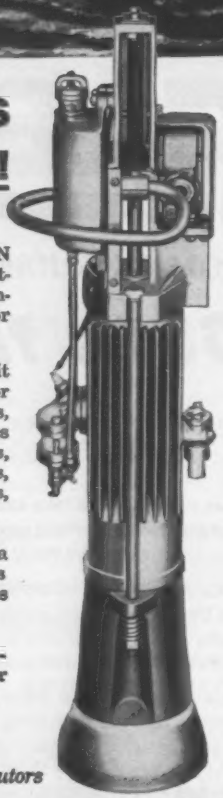

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the change in the specifications. The owner paid the electrical contractor $200.00.

The owner's engineer inspected the job and certified that it had been performed in accordance with the specifications. The electrical contractor demanded payment of the balance due from the owner but no payment was ever made.

When suit was brought, the owner requested dismissal of the action on the ground that the subcontractor's right of action was solely against the general contractor. The court held that while the original contract was between the general contractor and the subcontractor, there was a partial rescission of the contract as to the electrical work and that the agreement between the parties that the general contractor should pay the original price for the electrical work and that the owner would pay for the increased cost resulting from a change in the specifications was enforceable. This judgment was affirmed on appeal.[1]

(1) Farr v. McCook, 98 S.E. 2d 584, Court of Appeals of Georgia, May 17, 1957.

Contractor's Profit Loss Is a Measure of Damages

A contractor prevented from performing his contract is entitled to damages.

Under Massachusetts law, the contractor is excused from completing the contract and is entitled to recover the profit he would have made if he could have finished his work.

In a recent case, a developer agreed in writing to furnish and spread the materials for sidewalks and to pay a contractor so much per square yard for applying the bituminous topping.

None of the preliminary work had been done when the contractor arrived to begin the job. The developer orally instructed the contractor to spread the gravel and to proceed with the contract. Before the spreading phase was completed, the contractor was ordered off the job.

He sued the developer for cost of spreading the gravel and for loss of profits on his contract. The court granted him a recovery.[1]

First, the court said, the gravel work was apart from and in addition to the original contract. Since it was not covered by the contract price, compensation was due.

On the second issue, the court held that the contractor was excused from performing the paving contract because the developer had prevented perform-

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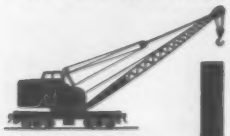

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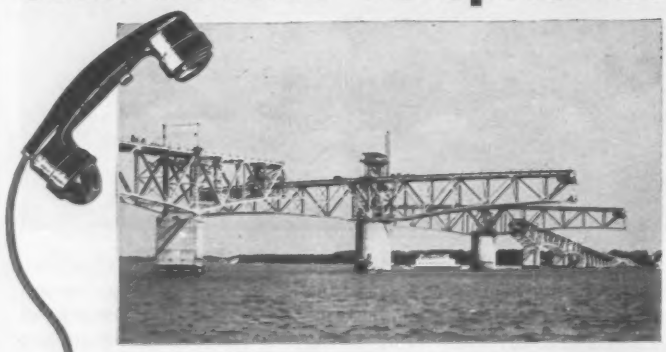

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ance; the contractor, therefore, was "entitled to be placed in as good a position as he would have been in had the contract been performed." And, the court added, "such damages would include loss of profits."

(1) Cetrone v. Livoli, 150 N.E. 2d 732, Supreme Judicial Court of Mass., June 2, 1958.

No Liability for Defects After Delivery of Title

When a buyer accepts title to a new house, the builder's liability for defects in the work ends, except in cases of fraud or hidden defects.

Sometimes, as in a recent New York case, the buyer thinks he is preserving his claims against the builder although he has lost them because he hasn't been specific enough.

The purchase contract in that case said that closing of title would discharge the builder from all obligations. The buyer, knowing that defects existed, moved in under an "as is" agreement before title was closed. Although the agreement provided that the contractor was to comply with all terms of the building contract, it also specifically stated that the purchaser would have no claim against the builder after the deed was delivered.

Title was closed before all defects were corrected. When the builder failed to make the corrections demanded by the buyer, the buyer sued for damages. The court dismissed the case[1].

It held that defects in the work were all known to the purchaser at the time he took title. The purchaser accepted title despite the fact that corrections were not made. Such conduct, the court said, constitutes a waiver of defects.

Moral of the case is this: A purchaser protects his rights by insisting on a contract provision stating that acceptance of the deed shall not constitute a waiver of damage claims for defective performance.

(1) Beagelman v. Lydia Homes, Inc., 171 N. Y. S. 2d 279, N. Y. Supreme Court, Nassau County, Feb. 8. 1958.

These summaries of court decisions are prepared by I. Vernon Werbin, Esq., New York attorney and licensed professional engineer, who is author of the following books published by McGraw-Hill Book Company, Inc.: *Legal Phases of Construction Contracts; Legal Guide for Contractors, Architects and Engineers;* and *Legal Cases for Contractors, Architects and Engineers.*

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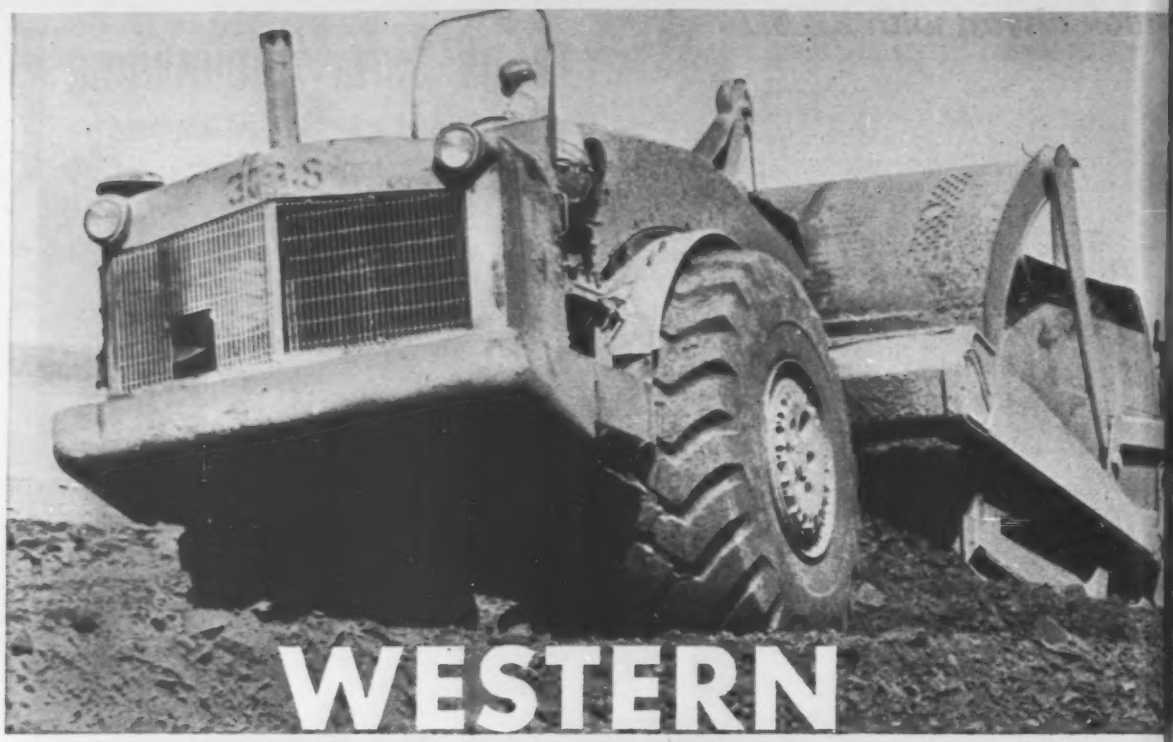

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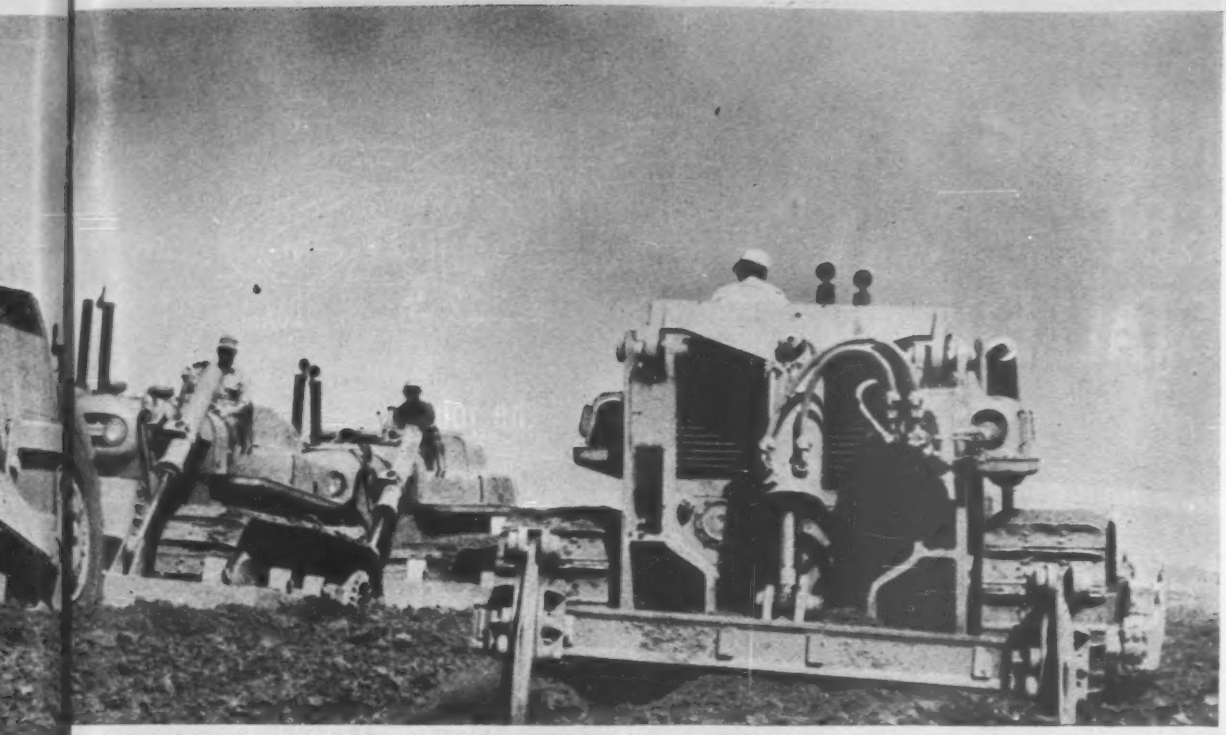

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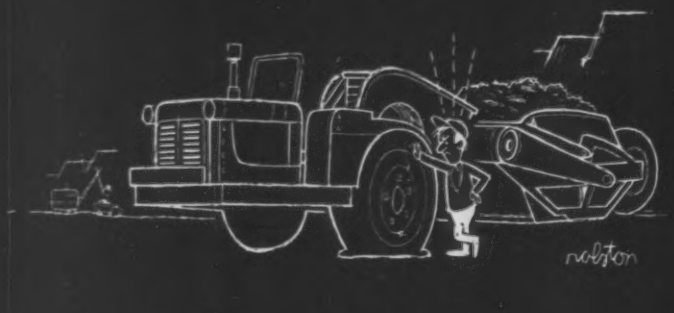

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Books

Public Health

ENVIRONMENTAL SANITATION—by Joseph A. Salvato, Jr. 660 pp. John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N.Y. $12.

This text covers the field of public health sanitation and is written more for the rural and suburban environment than for larger communities. A particular effort was made to include design, construction, maintenance and operation of smaller plants and structures for facilities serving 1,000 to 5,000 persons. Subjects covered include communicable diseases, water supply, sewage, swimming facilities, food and milk, pest control, housing and health department organization.

Reports and Pamphlets

• **Port of Copenhagen**—A special issue of the Copenhagen Harbor Journal reviewing the history and development of the port of Copenhagen over the last 100 years is available from the office of the Journal, 7 Nordre Toldbod, Copenhagen, K, Denmark. The text is in both Danish and English. Price 7 Danish kroner.

• **Hyperbolic roof in plywood**—Results of reasearch and experimentation on a novel 20 x 20 ft roof section are given in Bulletin 41 of the School of Engineering and Architecture, University of Kansas, Lawrence, Kan. Titled "Design, Construction and Testing of a Plywood Hyperbolic-Paraboloid Lattice Structure," the bulletin presents a semi-empirical design method correlated with results of a structural test. Testing methods are described in detail. An appendix discusses membrane analysis of shells. The authors are Willard Strode, associate professor of architectural engineering, and Donald L. Dean, associate professor of civil engineering.

TESTS OF HOLDING STRENGTH OF FORM ANCHORS EMBEDDED IN CONCRETE PLACED AND CAST AT REDUCED TEMPERATURES—Director, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Miss. 50¢.

FIELD SONISCOPE TESTS OF CONCRETE, 1953-1957 TESTS—Director, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Miss. 50¢.

URBAN FRINGE SANITATION, A SELECTED BIBLIOGRAPHY—Superintendent of Documents, Government Printing Office, Washington 25, D. C. 15¢.

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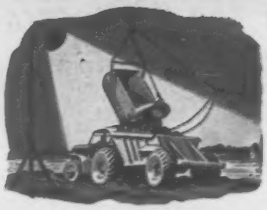

Model 5RM61, 5 KW, 115/230 volt A.C. Air-cooled. Remote starting.

Kohler electric plants have demonstrated their reliability on construction jobs of all kinds including such large-scale projects as St. Lawrence Seaway, new turnpike construction. Use them for all floodlighting and power tool requirements. Sizes: 500 Watts to 100 KW gasoline, 10 KW to 100 KW diesel. Write for folder B-34.

KOHLER CO. KOHLER, WIS.
Established 1873

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Enameled Iron and Vitreous China Plumbing Fixtures • Brass Fittings
Electric Plants • Air-cooled Engines • Precision Controls

250-E illustrated with 7" dial

For ACCURATE BATCHING specify...
Sparling
Batch Control Totalizers

Accurate, automatic batch control is assured when you use a Sparling Batch Control Totalizer. All Sparling Batch Control Totalizers and meters are ruggedly built of the highest quality materials . . . for years of service . . . one Sparling customer recently removed and tested a Sparling unit, after 20 years of continuous service, and found it as highly accurate as it was on its first day of service.

Sparling 250-E Totalizers, weatherproof and easily read, register within 2% when a specified quantity has passed through. Can be remote controlled—cable or electric, with automatic re-set.

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☐ Yes! Without obligation to us, please send more information on Sparling Batch Control Equipment.

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Company .....
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City ..... Zone ..... State .....

Send to: SPARLING METER COMPANY
237 N. Temple City Blvd., El Monte, Calif.

acker core drills

do the "underground work" wherever highways are underway!

Contractors FROEHLING & ROBERTSON, INC., of Baltimore own the trailer mounted Acker TH Core Drill shown above. It is doing test boring for the new Cumberland Highway.

Wherever highway construction is underway, you will find Acker Equipment engaged in "underground" exploration work.

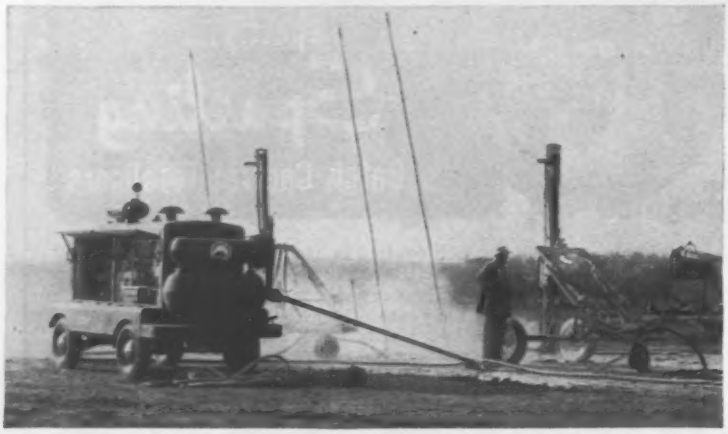
And, there's good reason!

Acker Rigs are compact, dependable and ruggedly built. Like the Acker TH Core Drill pictured, they can be furnished completely self-contained with water pump, derrick, cargo-type winch, choice of power plant and mounting on trailer, truck or jeep.

For the complete story on why Acker Core Drills are preferred by leading contractors and engineers, please write for Bulletin 30. ENR

ACKER DRILL CO., Inc.
P.O. Box 830 • Scranton, Pa.

Over 40 years of experience manufacturing a complete line of diamond and shot core drills, accessories and equipment.



Only Jaeger delivers 600 cfm at 1650 rpm

Although powered with the same GM 6-71 diesel engine as the Jaeger "600", other compressors run 150 rpm faster to produce the same 600 cfm of air. In 8 hours' continuous operation a Jaeger averages 72,000 fewer revolutions, saves miles of engine piston travel and many pounds of fuel. Jaeger "125", "250" and "365" sizes are comparably efficient. See your Jaeger distributor for complete cost-saving data, or request Catalog JC-7.

THE JAEGER MACHINE CO., 200 Dublin Ave., Columbus 16, Ohio

. . . Books

Engineer Waterways Experiment Station, Vicksburg, Miss. 50¢.

THE MUNICIPAL YEAR BOOK, 1958—Orin F. Nolting and David S. Arnold, editors. 598 pp. International City Managers' Association, 1313 E. 60 St., Chicago 37, Ill. $10.

HEATING VENTILATING AIR CONDITIONING GUIDE 1958—36th Edition, 1,775 pp. American Society of Heating and Air-Conditioning Engineers, 62 Worth St., New York 13, N. Y. $12.

HYDRAULICS OF CLOSED CONDUIT SPILLWAYS—Part I: Theory and Its Application, 80¢; Parts II through VII: Results of Tests on Several Forms of the Spillway, $1.50; Part VII: Miscellaneous Laboratory Tests, and Part IX: Field Tests, $1.50; Part X: The Hood Inlet, $1.00. St. Anthony Falls Hydraulic Laboratory, University of Minnesota, Minneapolis, Minn.

TRANSPORTATION LINES ON THE GREAT LAKES SYSTEMS 1958—Superintendent of Documents, Government Printing Office, Washington 25, D. C. 60¢.

WATER WELL DRILLING WITH CABLE TOOLS—by Raymond W. Gordon. 230 pp. Bucyrus-Erie Co., South Milwaukee, Wis. $2.50.

RADIOISOTOPES—A NEW TOOL FOR INDUSTRY—by Sidney Jefferson. 110 pp. Philosophical Library, Inc., 15 E. 40th St., New York 16, N. Y. $4.75.

CONTRACTS SPECIFICATIONS AND LAW FOR ENGINEERS—by Clarence W. Dunham and Robert D. Young. 550 pp. McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York 36, N. Y. $7.50.

APPLIED STATISTICS FOR ENGINEERS—by William Volk. 354 pp. McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York 36, N. Y. $9.50.

INDETERIMINATE STRUCTURAL ANALYSIS—by J. Sterlin Kinney. 655 pp. Addison-Wesley Publishing Co., Inc., Reading, Mass. $9.50.

PROCEEDINGS OF THE FOURTH INTERNATIONAL CONFERENCE ON SOIL MECHANICS AND FOUNDATION ENGINEERING (2 volumes). Volume I: Divisions 1-3a; Volume II: Divisions 3b-6 and Reports. Butterworths Publications, Ltd., 88 Kingsway, London W.C. 2, England.

CONCRETE PIPE HANDBOOK—American Concrete Pipe Association, 228 N. La Salle St., Chicago 1, Ill. Members, $6.00: non-members, $8.00.

FATIGUE OF AIRCRAFT STRUCTURES—STP No. 203—104 pp. American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa. $2.75 (hard cover).

SYMPOSIUM ON TITANIUM—STP 204—214 pp. American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa. $4.75 (hard cover).

ANALYTICAL MECHANICS FOR ENGINEERS—Fifth edition. 475 pp. John Wiley & Sons, 440 Fourth Ave., New York 16, N. Y. $7.25.

STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES—7th edition. American Association of State Highway Officials, 917 National Press Building, Washington 4, D. C. $5.00.

SIMPLE EARTH MOUND FORM eliminated falsework, simplified circumferential prestressing and speeded placement of concrete. Note uncompleted form for ring girder at base of the mound.

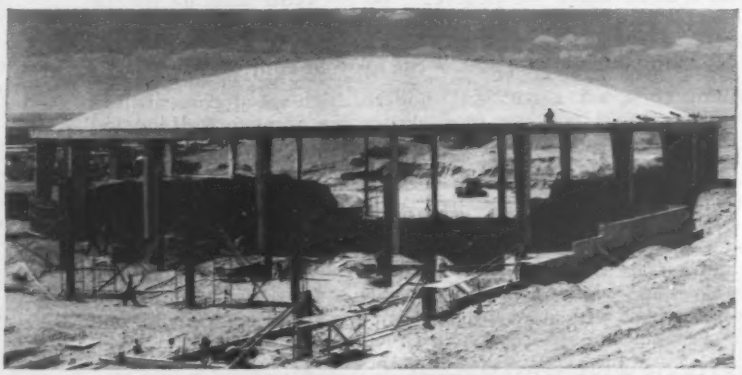
Dirt cheap form for concrete roof

A MODERN MOUND BUILDER saved at least $50,000 in shoring costs by pouring this auditorium roof dome on a mounded earth form . . . then excavating.

The 120,000 cu. yd. sand and gravel mound was built up and shaped within a ring of reinforced concrete columns varying with the terrain from 24′ to 42′ high. Excavating the mound left the dome sitting pretty on the columns.

Most of the 218′ dia. shell was poured directly on the compacted earth. A 30′ wide band at the periphery, the only part of the roof which is exposed in the completed auditorium, was lined with plywood panels to give the concrete a smooth under-surface. The 23′ high dome tapers from 9″ thickness at the periphery to 5″ at crown. It is ringed by a reinforced concrete girder, post-stressed to 145,000 psi.

The 1000 cu. yds. in the dome were poured in 4 concentric lifts. Truck mixers chuted the first lift directly in place. Cranes took over the other 3 pours with the top lift handled crane-to-hopper-to-buggy. Placement was completed in 1½ weeks with on-schedule deliveries of material properly processed by truck mixers of certified design, capacity, mixing speed and water control accuracy.



THIN-SHELL DOME for Albuquerque, N. Mex. civic auditorium stands on ring of columns after excavation of earth mound. Shell has both radial and circumferential reinforcement. Architects, Ferguson, Stephenson & Associates; general contractor, Lembke, Clough & King. Both are Albuquerque firms.

TENSION was applied to high-strength wire in ring girder by a dynamometer instead of a die. The 655 wire turns were anchored individually and each layer grouted.

You have a right to insist on this Rating Plate. It certifies compliance with the high industry standards maintained for your protection by the Truck Mixer Manufacturers Bureau.

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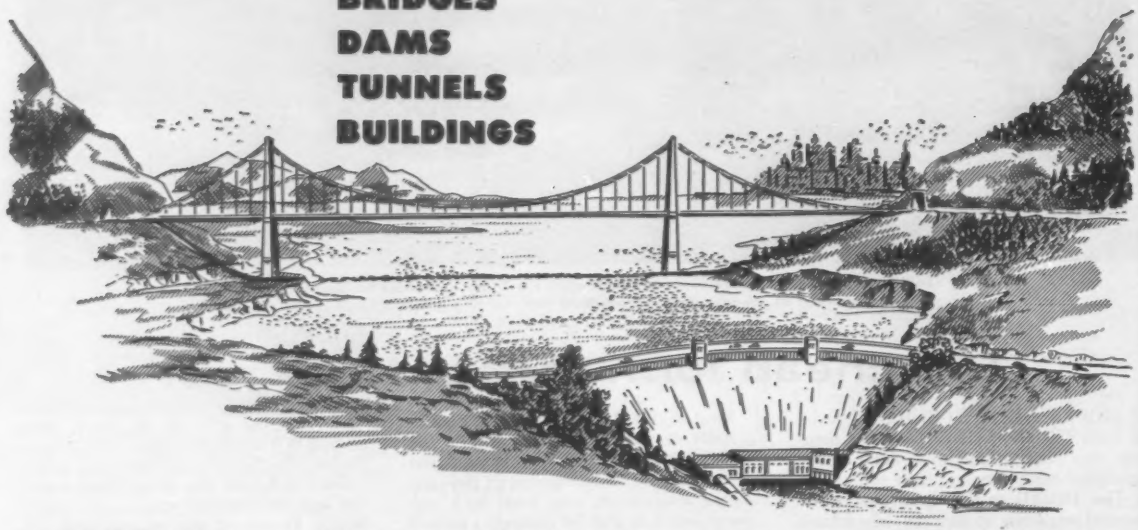
YOUR DRILLING AND SAMPLING CENTER

FOR: SUB-SURFACE INVESTIGATIONS...

HIGHWAYS
BRIDGES
DAMS
TUNNELS
BUILDINGS



● EQUIPMENT SALES

Core Drills . . . Soil Samplers . . . Pipe Driving Winches . . . "Oriented" Diamond Bits . . . Accessory Equipment

The proper equipment is a necessary requirement for securing the accurate soil and rock samples needed to accurately determine the bearing capacity, etc. of penetrated strata. Sprague & Henwood has the most advanced equipment needed to perform this task. One such item is the new S&H Vane Shear Tester, which we believe to be the most accurate on the market today. It provides laboratory accuracy right in the field! The S&H Vane Tester and several other new sampling devices are introduced in the new Soil Sampling Bulletin No. 300. Write for your copy, now.

For drilling rock, ask about S&H modern, high-speed core drilling machines. For a lower cost per foot, always use Sprague & Henwood "Oriented" Diamond Bits.

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Foundation Testing . . . Core Drilling . . . Soil Sampling . . . Pressure Grouting . . .

Longer bridges . . . Bigger dams . . . Taller buildings . . . Modern highways . . . all require more accurate foundation testing. Successfully designed projects depend largely on the unbeatable team of experienced drilling crews, modern drilling equipment, and expert drilling supervision. Sprague & Henwood has all three, assuring you accurate soil samples and rock cores whenever and wherever possible. Branches are staffed with experienced crews, stocked with modern equipment and are strategically located to give you fast, efficient service.

CALL, WRITE OR WIRE TODAY describing the sub-surface investigation you are planning! If you want to do the drilling and sampling yourself, we have the machines, samplers, accessory equipment and bits you'll need. If you don't want to purchase the equipment and do it yourself—we'll do it for you by contract.

SEE US AT THE ASCE CONVENTION • BOOTH 27

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Florida Vehicular Tunnel Bid Two Ways

Tremie seal method draws lower price than pressure grouting and/or well points for tunnel foundations on irregular porous rock

The State Road Department of Florida gave contractors their choice of two methods in bidding for construction of this four-lane vehicular tunnel in Fort Lauderdale.

To place foundations on irregular strata of porous rock of variable hardness, two bidders elected Method A, all dry concrete construction, cofferdam dewatering by pressure grouting of underlying rock, or the use of well points, or a combination of both methods.

Four, including the low bidder, chose Method B, a 4 ft tremie seal anchored to the rock with grouted dowels, with all construction above seal to be of reinforced concrete placed in the dry, and with waterproof membrane completely enclosing the box section and extending above ground water in the ramps.

The $6,473,230 award to Thorington Construction Co., Inc., and Alfred Spear, Richmond, on alternate Method B, was 15% below the engineer's estimate and 5.3% below the low bid on alternate Method A. It was 7.3% below the second bid on alternate Method B, and more than 16% below the high of the four bids on that alternate.

The excess over the estimate was entirely accounted for by difficult dewatering and tunnel excavation work.

A. C. Church is state highway engineer at Tallahassee. Singstad & Baillie, New York City, is the consultant.

The tunnel will be 863.7 ft long between approaches, with open ramp sections 633 ft long on the south and 481 ft on the north. It will have two ventilation buildings. The twin barrel section will be cast monolithically in open trench, the westerly barrel providing a 24 ft roadway for two traffic lanes south bound, the easterly barrel with a similar roadway for two traffic lanes north bound, and a 4 ft 9 in. sidewalk. It will accommodate a present traffic of 24,000 vehicles a day on U. S. 1, crossed by 13,000 vehicles on Las Olas Blvd., the volume expected to double by 1975.

Provision must be made for the maintenance of both highway and waterway traffic during all stages of construction. To accommodate highway traffic, the contractor must construct and maintain service roads within the project length, and construct and maintain two two-lane temporary bridges over the New River, one a block east and the other a block west of the tunnel site. Each bridge will include a draw span with 40 ft horizontal clearance in the open position.

The contractor's design for the bridges must be submitted to the engineer for approval.

Minimum wages include: carpenters, $2.15; crane and shovel operators, $2.53; tractor operators, $1.75; concrete finishers, $2.00; common laborers, $1.25.

The bids below are on both alternate methods of construction, and the unit prices are the low bids on each alternate.

		Alternate Method A	Alternate Method B
1C	Tharington Constr. Co., Inc. & Alfred Spear, Richmond, Va.	nb	$6,473,230
1	The Hunkin-Conkey Constr. Co., Cleveland, Ohio	$6,837,000	nb
2	Tidewater Constr. Corp., Norfolk, Va.	7,025,446	nb
2	Baltimore Constr. Co., Baltimore, Md.	nb	6,980,186
4	Intercounty Constr. Co., Hyattsville, Md.	nb	7,741,005

A All dry concrete construction, dewatering cofferdams by pressure grouting underlying rock; use of well points; or combination of both methods.

B 4 ft tremie seal anchored to rock with grouted dowels, all construction above seal or reinforced concrete placed in the dry, with waterproof membrane enclosing box section and extending above ground water in the ramps.

Bids: 6-26-58 Items	Unit	Quantity	Unit Prices B 1C	Unit Prices A 1
Schedule A				
Exc, cl A	cy	1,950	.....	$19.34
cl B	cy	120,000	.....	2.71
Dewater exc for tunn & open ramp sects	ls	job	2,251,474	
Conc for tunn, cl A	cy	43,000	.....	38.39
cl B	cy	4,320	.....	41.54
Reinforcing bars	lb	4,050,000	.....	0.113
Metal mesh	lb	21,000	.....	1.67
Waterprf, membr, 1 ply	sy	14,000	.....	1.41
4 ply	sy	16,350	.....	4.00
brick in mastic	cy	1,050	.....	102.57
Fab carbon steel	lb	10,000	.....	0.70
Schedule B				
Exc, cl A	cy	1,950	15.00	.....
cl B	cy	123,000	5.00	.....
Dewater exc for tunn & open ramp sect	ls	job	1,705,000	.....
Conc for tunn, cl A	cy	32,000	30.00	.....
cl B	cy	2,250	90.00	.....
seal	cy	16,750	25.00	.....
Reinforcing bars	lb	4,110,000	0.13	.....
Metal mesh	lb	21,000	0.22	.....
Dowels, type B	lf	14,600	1.20	.....
Waterprf, membr, 1 ply	sy	2,000	1.20	.....
4 ply	sy	13,250	3.00	.....
brick in mastic	cy	150	100.00	.....
Fab carbon steel	lb	1,760,000	0.19	.....
Steel expansion jts	lb	7,200	0.60	.....

Bids: 6-26-58 Items	Unit	Quantity	Unit Prices B 1C	Unit Prices A 1
Schedule C				
Clear & grub	ls	job	16,000	15,217
Excavation, regular	cy	7,750	1.25	1.41
Grading roadway	ls	job	7,000	7,045
Stabilizing	ls	job	9,000	9,187
Limerock base, 8½", primed	sq	14,500	1.60	1.69
Bit matl, plt mix & tack coat	gal	29,000	0.16	0.16
ACSC, type 1, 1½", & binder crse, 1½"	sq	14,500	1.60	1.69
Conc pipe culv, special				
12"ϕ	lf	658	11.00	11.84
18"ϕ	lf	1,192	13.00	14.43
24", inc conc endwalls	lf	567	19.00	20.85
inc conc cradle	lf	168	45.00	45.09
30"ϕ	lf	244	26.00	27.73
36"ϕ	lf	372	33.00	35.78
Inlets, type A	ea	17	200.00	214.18
B	ea	1	300.00	338.00
Manholes, type A	ea	11	300.00	321.27
B	ea	2	450.00	479.00
C	ea	2	500.00	541.00
Conc curb, median, type A	lf	250	3.00	2.82
special	lf	3,150	2.50	2.48
& gutter	lf	4,500	2.50	2.48
sidewalk, 4"	sy	4,000	4.00	4.51
6"	sy	100	5.50	5.64
Grass	sy	785	1.00	0.23
Conc traf sep, 4' 6"	lf	300	7.00	6.76
Cal chlor, dust control	t	50	130.00	135.26
Exist bridge, demolish	ls	job	15,000	6,200
Exc, cl C	cy	660	10.00	5.17
Cmt coat waterprfg	ls	job	5,000	4,734
Castings, gray iron	lb	39,000	0.22	0.33
steel	lb	21,000	0.40	0.37
Galv stl pipe rail, tp A	lf	1,130	8.00	12.12
B	lf	220	6.00	12.12
stair railing	lf	190	10.00	7.68
Guard pipe railing	lf	135	16.00	14.82
Steel curb, type A	lf	2,600	4.10	9.09
B	lf	5,400	4.00	7.89
Doors w/frame & hware, ingot iron	ea	2	250.00	338.00
hollow metal	ea	3	250.00	169.00
Stainless stl nosing	lb	4,370	2.10	2.45
Tunnel name letters	ls	job	5,400	4,509
Vit enam ctd pipe rail	lf	840	13.00	15.20
Split VC gut lining, 15"	lf	1,010	2.00	4.01
10"	lf	920	1.10	3.03
Copper drains	lb	350	15.00	1.24
Cer gl coil tile f&i	sf	44,700	1.90	2.14
wall tile f&i	sf	40,400	1.90	2.14
Ceil & wall tile, extra for fut repl f&d	ls	job	600.00	564.00
Cmt mortar ceil caves	lf	3,450	0.60	5.07
bases	lf	5,150	0.60	3.95
Doors & frames, asbestos ebony type A	ea	7	300.00	676.22
B	ea	6	300.00	659.33
C	ea	2	1,200	789.00
D	ea	1	1,200	293.00
E	ea	4	500.00	242.25
Roadway lane markers	lf	7,900	4.00	5.07
Galv WI pipe, 4"ϕ	lf	990	6.00	30.00
6"ϕ	lf	890	9.00	43.68
Stl conduit, rigid, ¾"ϕ	lf	900	1.00	0.63
1"ϕ	lf	300	1.10	1.15
1¼"ϕ	lf	5,000	1.60	1.72
2"ϕ	lf	6,700	1.80	1.94
2½"ϕ	lf	250	3.00	3.38
3"ϕ	lf	550	4.00	3.78
3½"ϕ	lf	150	6.00	6.17
4"ϕ	lf	3,200	5.00	4.82
5"ϕ	lf	900	7.10	7.96
Cl boxes, type SL-7	lb	5,350	3.00	3.10
other types	lb	2,650	2.10	2.29
Bare grounding cable	lf	4,800	1.00	0.91
Ventilation bldg, South	ls	job	90,000	98,283
North	ls	job	35,000	68,110
equipment	ls	job	50,000	50,528
Pumping equipment	ls	job	80,000	52,723
Elec wiring & equipment	ls	job	290,000	322,830
Sea walls, new	lf	220	250.00	107.08
Vit enam ctd plaques & signs	ls	job	2,000	4,325
Concrete toe walls	cy	100	15.00	84.54
CIP for W serv conn, 4"	lf	30	3.00	13.53
Cop tube, W serv conn, 1½"	lf	50	2.00	3.94
CIP, ex hvy, san conn, 4"	lf	155	4.00	17.75
strm drn conn, 6"	lf	52	5.00	24.81
CIP, force main drn, 12"	lf	93	7.00	44.24
Protective blanket	cy	800	9.00	7.89
Maintain traffic	ls	job	75,000	38,183
Detours, construct	ls	job	165,000	103,139
maintain	ls	job	10,000	13,526
operation	ls	job	70,000	77,777
removal	ls	job	12,000	11,272

Awarded 7-16-58 Complete: 900 cal days

Materials and Labor Prices

Market Quotations by ENR Field Reporters

See following ENR issues for OTHER PRICES:

- Wood Products, Glass, Explosives, Chemicals: Last, Sep. 18; Next, Oct. 23
- Clay Products, Lime, Plaster, Paint, Roofing: Last, Sep. 25; Next, Oct. 30
- Wage Rates, Building Board, Lath, Insulation: Last, Oct. 2; Next, Oct. 30
- Cement, Aggregate, Ready-Mixed Concrete, Asphalt: Last, Oct. 9; Next, Nov. 6

IRON AND STEEL PRODUCTS—PER 100 LBS. BASE MILL PRICES

	STRUCT SHAPES—	PLATE CARBON STEEL	REINF BARS* billet	RIVETS ½-in. structural	SHEET PILING Base	STEEL RAILS Per Net Ton Standard	STEEL RAILS Per Net Ton Light	TRACK SUPPLIES Angle Bars	TRACK SUPPLIES Std Spikes	TRACK SUPPLIES Tie Plates	TRACK SUPPLIES Track Bolts
Birmingham Area	$5.50	$5.30	$5.675	$12.25	.....	$110.50	$120.00	$6.975	$9.75	$6.60	.....
Chicago Area	5.50	5.30	5.675	12.25	$6.50	110.50	120.00	6.975	9.75	6.60	.....
Pittsburgh Area	5.50	5.30	5.675	12.25	6.50	110.50	120.00	6.975	9.75	6.60	$14.75
Buffalo Area	5.50	5.30	5.675	12.25	6.50	110.50	120.00	6.975	9.75	6.60	14.75
Cleveland	.....	.....	5.675	12.25	6.50	.....	.....	.....	.....	.....	14.75
Youngstown Area	.....	.....	5.675	.....	.....	.....	.....	.....	9.75	.....	.....
Geneva	5.50	5.30	.....	.....	.....	.....	.....	.....	.....	.....	.....
Los Angeles	6.20	.....	6.375	.....	6.50	.....	.....	.....	9.75	6.75	.....
Pueblo	.....	.....	.....	.....	.....	.....	.....	60.75	9.75	6.60	.....

* Fairless Works, $6.675.

IRON AND STEEL PRODUCTS—F.O.B. WAREHOUSE, PER 100 LBS., BASE PRICE

	STRUCTURAL SHAPES Per 100 lb. base price	STRUCTURAL SHAPES Extras, New York:	REINFORCING BARS Per 100 lb., base price 5 tons to carload lot New billet	REINFORCING BARS Rail steel	REINFORCING BARS Extras, New York:	EXPANDED METAL LATH Per 100 sq. yd., carload lots Std. diamond mesh, 3.4 lb.	EXPANDED METAL LATH Std. ribbed 3.4 lb.	WELDED FABRIC REINFORCING Per 100 sq ft., carload lots fob mill
Atlanta	$9.40		9.25	$9.01		$52.00	$57.00	
Salt Lake	9.675		8.70†	.....		43.00	46.50	
Birmingham	9.00†		8.99†	8.99†		57.00pJ	63.00pJ	
Boston	10.03nJ		8.75J	8.75J		46.50J	51.00J	
Chicago	9 15 ‡		7.16m	7 16m		52.00‡	63.00‡	
Cincinnati	‡ 56 ±J		9.08† e	.....		41.50mnJ	46.00mnJ	
Cleveland	c 39†		7.79 †	.....		47.50J K	52 00J K	
Dallas	10 40L		9.00	9.00		44.00	48.50	
Denver	10 16		9.25c	.....		57.00n	63.00n	
Detroit	9 56		7.15g	.....		55.00	63.00	
Kansas City	9 82n		8.10M	.....		49.00	60.00	
Los Angeles	8.90 .ft		7.35r	.....		57.00r	66.00r	
Minneapolis	.....		.....	.....		42.50	46.00	
Montreal	7.90–8.50C/8.20–8.90A		7.00/7.50FG	7.00/7.50FG		65.70h	70.20h	
New Orleans	.....		8.00pbs	.....		47.00	53.00	
New York	9 84‡z		8.00y	8.00y		50.50n	57.00ne	
Philadelphia	9.25/9.50O		7.60/8.23O	.....		42.50‡	47.00‡	
Pittsburgh	9 00y		7.35y N	.....		46.00‡rw	49.50‡rw	
St. Louis	9 48d		8.80wx	8.80.wx		61.00wxJ	63.00'wxJ	
San Francisco	9.90		9.85i	.....		52.00	56.00	
Seattle	9.80nD		8.85eL	.....		63.50nD	68.00nD	
Toronto	9.20H		7.85	7.85		46.00nqJ	49.00nqJ	

EXTRAS, per cwt—Quantity (applies to LCL shipments only): under 1,000#, +$1.50; 1000–1999#, +$1.20; 5000–9999#, +90¢; 10,000–19,999#, +80¢; 20,000–39,999#, +70¢; 40,000# & up, none. ◆Sizes†: #2 #3, +60¢; #4 +$1.00; #5 +70¢; #6, #7, #8, #9, #10, #11 +50¢. ◆Bending: heavy, +60¢; light +$2.50 (except in New York City and surrounding metropolitan area where bending must be done on the job). ◆Engineering (details and placing from designs by others): over 500 tons, +45¢; 200–499 tons, +50¢ but not over $2000; 20–74 tons, +75¢ but not over $975; 5–19 tons, +85¢ but not over $300; under 5 tons, +$1.00 but not over $88. Min. charge $28. Design only: +60¢.

Quantity extras, per cwt: under 100#, +$10; 100–399#, +$7; 400–999#, +4.00; 1000–1999#, +1.25; 2000–4999#, base price; 5000–9999#, –25¢; 10,000–19,999#, –50¢; 20,000–29,999#, –75¢; 30,000# and up, –1.25

*‡ Delivered. **~ Aver. of Canadian & American. *n 2000–9999#/ *o 10,000–15,999#/, fob city *c 20 tons or over *d 10,000–29,999#/ *e Intermediate struct'l *f Incl. delivering in free zone *g CL. *h list price: dominion tax exempt; add provincial and municipal taxes *i add dominion, provincial and municipal sales taxes *j intermediate and hard grade *k fob city *l delivered: contractor to do unloading *m copper alloy *n LCL *o asphalt coated *p 500 sq. yd. or more. *q 2.5 lb *r less 2% disc. for cash *s 2,000–4,999#/ *t less ½% disc. 10 days *u add 7.5c switch *v incl 15c del. *w truck lots. *x add 2% sales tax *y add 15c del. *z add 10c del. *A American made. *C Canadian made. *E 30,000# or over. *F Federal tax exempt for bldgs. *G add 10c del. *H 8.85 without tariff charges. *I 3 lb $60.00. *J less 2% disc. 10 days *K F.o.b. Youngstown plant *L 5,000–9,999#/ *M 2,000–19,999#/ *N Effective 8/15, just now available *O Effective Sept. '58. *R: revised.

PLUMBING, HEATING, WATER, SEWER AND DRAIN PIPE

	C. I. PIPE PRICE INDEX‡	ASBESTOS CEMENT PIPE per lin. ft. f.o.b. city 6" Press CL 150	ASBESTOS CEMENT PIPE per lin. ft. f.o.b. city 12" Sew CL 1500	CLAY SEWER PIPE Per ft., delivered, car load ASTM C13-54 8 in.	CLAY SEWER PIPE ASTM C13-54 12 in.	CLAY SEWER PIPE ASTM C200-55T 24 in.	CLAY SEWER PIPE ASTM C200-55T 36 in.	CLAY DRAIN TILE† Per 1,000 ft., car load lots, f.o.b. ASTM C4-55 8 in.	CLAY DRAIN TILE† 8 in.	CONCRETE SEWER PIPE‡ Per ft., delivered ASTM C 14-55 12 in.	CONCRETE SEWER PIPE‡ 24 in.
Atlanta	120.5	$1.56/1.69	$2.36/2.48	$0.53	$0.98	$....	$....	$209.00u	$334.00	$0.92mR	$3.68mR
Baltimore	140.4	1.56/1.69	2.19/2.30	.665	1.28	5.06T	12.71v	187.80	289.20	1.01	2.75m
Birmingham	125.8	1.56/1.69	2.26/2.37	.48mr	.90mr	3.88mrv	10.89mrv	273.00mr	440.00mr	1.25m	2.75m
Boston	143.5	1.58/1.71	2.19/2.30	.784mqr	1.512mqr	6.225mqr	.....	215.40mqA	330.60mqA	1.56mqA	3.47mq
Chicago	140.9	1.56/1.69	2.19/2.30	.93m	1.78m	7.52m	21.16m	230.00B	330.00B	1.30	4.00
Cincinnati	135.5	1.58/1.71	2.19/2.30	.665tA	1.2825tA	4.905tA	12.505A	240.00A	370 00A	.85mA	3.25mA
Cleveland	141.7	1.58/1.71	2.19/2.30	.77eC	1.485eC	4.905tC	12.505tC	155.40mC	240.60mC	.92m	4.55m
Dallas	137.8	1.58/1.71	2.26/2.37	.550	.955	4.40b	9.75b	.....	.....	1.21D	2.57D
Denver	148.2	1.79/1.80	2.36/2.48	.48n	.87n	3.73n	.....	.....	.....	.75m	2.75m
Detroit	142.1	1.58/1.71	2.19/2.30	.90n	1.70n	6.80n	18.50n	182.00m	280.25m	1.10	4.05
Kansas City	138.5	1.60/1.71	2.26/2.37	.81r	1.105r	5.694hr	12.09r	278.00r	493.00r	.95r	2.90r
Los Angeles	148.6	1.65/1.79	2.19/2.30	.74bl	1.61bl	6.42bl	15.36bl	370.00l	530.00l	1.12E	3.32jE
Minneapolis	149.9	1.60/1.75	2.26/2.37	.86mo	1.55mo	6.70mo	.....	.....	.....	2.13DEH	6.31DEH
Montreal	.....	.....	.....	1.13u	2.00u	7.00u	13.50u	288.00	548.00	1.17	3.11j
New Orleans	133.3	1.56/1.69	2.26/2.37	.528	.933	5.21	.....	210.50pR	468.00	....	....
New York	138.7	1.58/1.71	2.19/2.30	1.02	1.94	7.58	19.48	.....	.....	1.50‡B	3.60‡B
Philadelphia	139.0	1.56/1.69	2.19/2.30	.68	1.31	5.13z	14.25z	300.00‡	350.00‡	1.75h	4.20h
Pittsburgh	142.9	1.58/1.71	2.19/2.30	.595m	1.15m	4.73m	12.40m	190.00	295.00	1.66D	3.93D
St. Louis	136.9	1.56/1.69	2.26/2.37	.59rz	1.06rz	4.45rz	10.80rz	180.00rz	380.00rz	1.45il	3.10kl
San Francisco	148.6	1.65/1.79	2.19/2.30	.78d	1.69d	6.72d	16.36d	320.00l	560.00l	1.05m	3.30m
Seattle	149.0	1.65/1.80	2.19/2.30	.72 kk	1.50 kk	6.84‡k	.....	255.00‡ck	.....	1.95‡ky	4.75‡ky
Toronto	.....	.....	.....	.80F	1.50F	6.00F	.....	157.00F	280.00F	.92F	3.21F

*‡ Extra quality *§ Extra strength *† delivered. *n PRICE INDEXES for CENTRIFUGAL CAST IRON PIPE (Include carload freight allowed to city). These also serve as the HISTORICAL RECORD of THE $ PER NET TON PRICE of CLASS B, B&S, PIT CAST IRON PIPE. F.O.B. Foundry Price Indexes Birmingham, Ala., 125.8; Burlington, N. J., 134.5. *b Extra strength. *c 4-in., $140. *d SS361-A *f 21 in. *g culvert pipe; reinf., ASTM C 75–56 *h reinf., ASTM C 76–54 *i reinf., ASTM C 76–55 *j centrispun; no standard specs. in Canada. *k less 2% disc. for cash *l fob plant *m truck del. *n LCL del., fob truck *o less 5% disc. 10th *p freight allowed to destination in city *q 35,000# minimum *r less 2% disc. 10 days *s 1 ft lengths *t 3 ft lengths *u CESA A 60–1941 *v standard strength *w SS; add 20% for d.s. *x fob city *y Reinforced *z Upper value in range estimating price based on both truck lots and less than truck lots; lower value truck lot quantities *A less 2% disc. 10th *B truckload, del *C less 2% disc. 15th *D ASTM 76–57 *E less 1% disc. 10 days *F less 5% disc. 30 days *G LCL *H CL *I fob origin, freight allowed *R revised

***WROUGHT STEEL PIPE**

(Full standard weight)

Discount from list; see footnotes

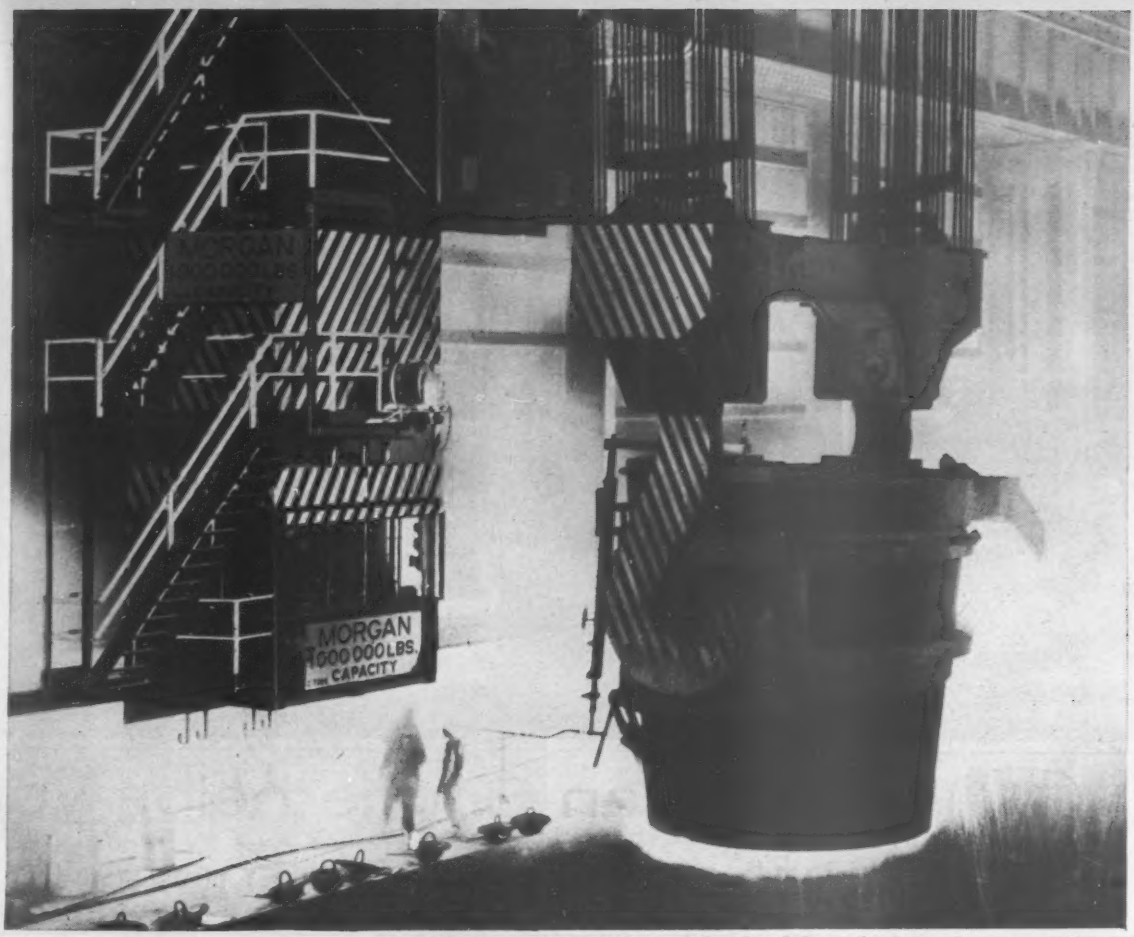
Mill	8½ to 9 in. Lap Weld* Galv. %	8½ to 9 in. Lap Weld* Black %	8½ to 9 in. Butt Weld* Galv. %	8½ to 9 in. Butt Weld* Black %
Lorain, Ohio	.....	3.25a	16.75	13.75
Aliquippa, Pa	.....	.....	16.75	13.75
Sparrows Pt., Md.	.....	†	17.25	13.75
Benwood, W. Va.	+11.00a	.....	13.75	13.75
Youngstown, O.	.....	+13.50a	+3.50	+3.50
Indiana Harbor, Ind.	.....	+14.50a	12.75	12.75
Sharon, Pa.	.....	.....	13.75	13.75
Wheatland, Pa.	.....	3.25a	+2.50	+2.50
Elba, Pa.	.....	+13.50a	base	base
Fontana, Calif.	.....	+12.75a	+15.50	+15.50
	.....	1.50d	0.75	0.75
	.....	+0.25e0		
	.....	+26.50e0		

Mill	2½ to 4 in. Butt Weld* Galv. %	2½ to 4 in. Butt Weld* Black %
Lorain, Ohio	0.50	1.00
Aliquippa, Pa	base	
Sparrows Pt., Md.	base	
Benwood, W. Va.	+2.50	+2.50
Youngstown, O.	+2.50	+2.50
Indiana Harbor, Ind.	+3.50	+3.50
Sharon, Pa.	+2.50	+2.50
Wheatland, Pa.	+2.50	+2.50
Elba, Pa.	base	base
Fontana, Calif.	+15.50	+15.50

* Threaded and coupled. a 3½ to 4 in. b Continuous weld. c to 1 5 and 6 in. d 6 in. † Production discontinued

*** WROUGHT STEEL PIPE:** Deduct discounts shown above from the following standard list consumers carload prices to get mill price. List prices per ft.("based on approx. $200 per net ton): Butt Weld ⅛ in., 31½¢; ¼ in., 6¢; ⅜ in., 6¢; ½ in., 8½¢; ¾ in., 11½¢; 1 in., 17¢; 1¼ in., 23¢; 1½ in., 27½¢; 2 in., 37¢; 2½ in., 58½¢; 3 in., 78½¢. Lap Weld 2½ in., 82¢; 4 in., $1.89; 5 in., $1.48; 6 in., $1.92. Add freight, 3% transport tax for destination price. † Production discontinued November 1957

WROUGHT IRON PIPE: List prices per ft. same as for wrought steelpipe, but add following "discounts" to get Pittsburgh mill price: Butt Weld—1 in. black, + 66.54, galv., + 95.77; 1¼ in. black, + 66.54, galv. + 95.23, 1½ in. black, + 61.79 galv. + 91.22; Lap Weld —2½ in. to 3 in. black + 67.96 galv. + 95 77; 4½ in. to 6 in. black + 84.74 galv. + 90.60 Add freight rates plus 3% transportation tax to get destination price.



Repeated million-pound loads in the intense heat from 375 tons of molten steel, cause no spalling or deformation of Rollway Bearings.

1,122,000 Pounds Ride on 68 Rollway Bearings

One of the largest in the world, this 500-ton Morgan-built ladle crane is Rollway equipped in many positions.

Sixty-eight maximum-type, solid-cylindrical bearings—mounted without inner races—lift and lower the 1,122,000-pound weight of the lifting beam, ladle hooks, ladle and white-hot steel.

Rollway Tru-Rol® type bearings are used in the two General Electric 360 HP – MD-620 Hoist motors which lift the weight of the ladle and its molten metal content.

The maximum-type bearings in the hoisting sheaves are mounted directly on the shaft without inner races, which greatly simplifies assembly for applications of this size.

Thrust bearings in the 25-ton and 75-ton auxiliary crane hooks are standard Rollway precision types with broad-area contact between rollers and plates to prevent Brinelling and assure freedom of rotation under the heaviest loads.

Sheaves ready for assembly on shaft and installation in lifting beam.

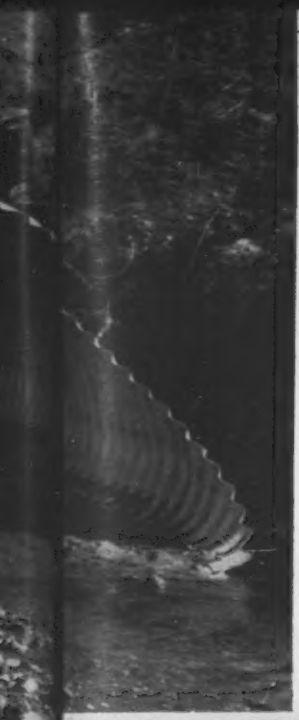
For bearings that accomplish the extraordinary in an ordinary manner, write, wire or 'phone Rollway Bearing Co., Syracuse 1, N.Y.

ROLLWAY® BEARINGS

ENGINEERING OFFICES: Syracuse • Boston • Chicago • Detroit • Toronto • Pittsburgh • Cleveland • Seattle • Houston • Philadelphia • Los Angeles • San Francisco

KEEP OUR ROADS ON THE GO

American Bridge helps you build more road for the money!



These Structures were furnished to Prince Georges County, Maryland—John H. Marburger, Jr., Administrator of Public Works—by Lane-Penncarva, Inc., Bealeton, Virginia.

Twin Beds for Winkledoodle

. . . or a quick, low-cost way to remove a roadblock

Winkledoodle is a quiet little creek which runs through a real estate development in the Maryland suburbs of Washington.

But sometimes even an innocent-looking stream like Winkledoodle becomes a headache when it blocks progress by dead-ending a street which ought not to be dead-ended. Solving such a problem is less difficult than you might think, as you can see from the experience of the Department of Public Works of Prince Georges County, Maryland.

Serving as giant twin-covered beds for Winkledoodle, long pipe-arch drainage structures shown here were made of USS AmBridge Sectional Plate. They each have a 12′6″ span, a 7′11″ rise, and are 112′ long. Each was erected in the bed of the temporarily diverted stream in just *five working days* by a five-man crew, plus crane.

Job Superintendent says: "They went together easier than any in my experience."

The dimensional accuracy of prefabricated USS AmBridge Sectional Plate Pipe, Pipe-Arches and Arches assures precision fit in the field. In fact, Arthur Richards, Bridge Superintendent, enthusiastically says that the Winkledoodle drainage structures went together easier than any in his experience. He was also impressed with the uniform curvature of the interchangeable plates.

No forms needed . . . no breakage

USS AmBridge Sectional Plate Pipe, Pipe-Arches and Arches eliminate the need for forms. And, being made of steel, there is no breakage. They are permanent. And they can be extended whenever the road is widened. Fabricated to meet all federal and state specifications, they are available in a complete range of standard sizes to satisfy the design requirements for area of waterway openings.

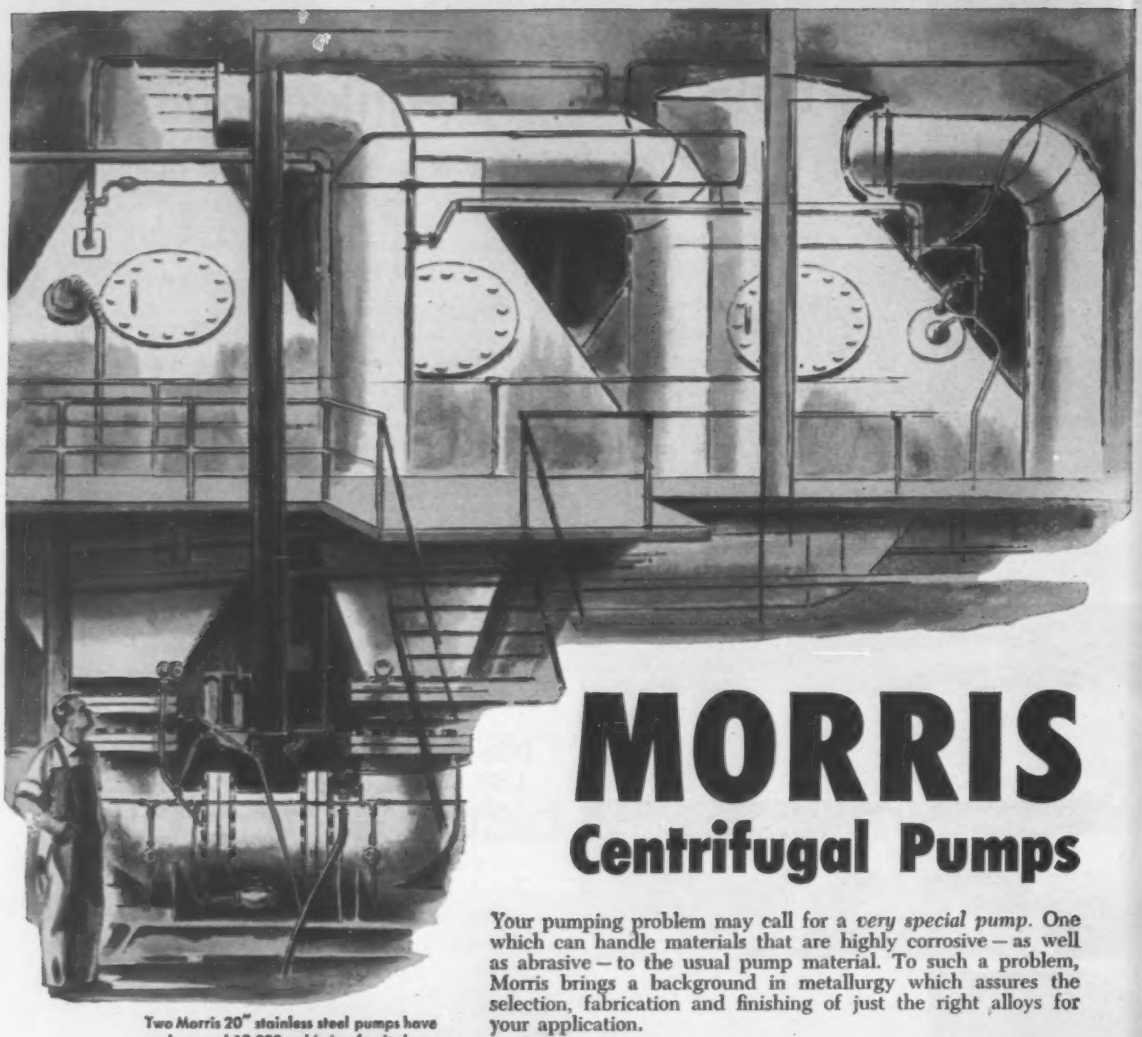
For a free copy of our 28-page AmBridge Sectional Plate Catalog, write direct to our Pittsburgh Office. For information on smaller drainage structures made from USS Galvanized Corrugated Culvert Sheets, please send your inquiry to United States Steel, Room 2801, 525 William Penn Place, Pittsburgh 30, Pa.

USS and AmBridge are registered trademarks

American Bridge Division of USS United States Steel

General Offices: 525 William Penn Place, Pittsburgh, Pa.
Contracting Offices in: Ambridge · Atlanta · Baltimore · Birmingham · Boston · Chicago · Cincinnati
Cleveland · Dallas · Denver · Detroit · Elmira · Gary · Houston · Los Angeles · Memphis · Minneapolis
New York · Orange, Texas · Philadelphia · Pittsburgh · Portland, Ore. · Roanoke · St. Louis
San Francisco · Trenton · United States Steel Export Company, New York

For pumping abrasive and corrosive materials

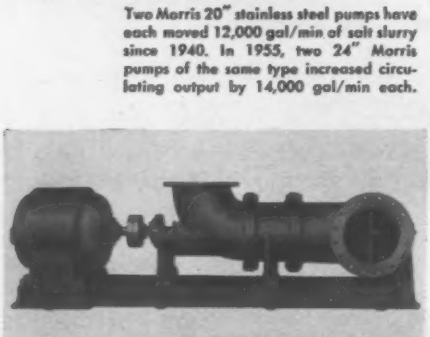


Two Morris 20" stainless steel pumps have each moved 12,000 gal/min of salt slurry since 1940. In 1955, two 24" Morris pumps of the same type increased circulating output by 14,000 gal/min each.

MORRIS
Centrifugal Pumps

Your pumping problem may call for a *very special pump*. One which can handle materials that are highly corrosive — as well as abrasive — to the usual pump material. To such a problem, Morris brings a background in metallurgy which assures the selection, fabrication and finishing of just the right alloys for your application.

CASE HISTORY: In 1940, International Salt Company installed two Morris stainless steel axial flow pumps to circulate salt slurry through evaporators at 200° F. Both ran *without pause* from the day they were installed until recently, when only minor repairs were required to return them to all-new condition. On the basis of this performance, when it was decided to up plant capacity, International chose two more Morris pumps of the same type.



Continuing high efficiency — even under adverse conditions — is the big dividend delivered by Morris.

If top performance *must* be maintained over long periods under adverse conditions . . . talk with our engineers. They are qualified to recommend a pump with a margin for safety you can depend on through the years.

MORRIS CENTRIFUGAL PUMPS

MORRIS MACHINE WORKS
BALDWINSVILLE, N. Y.

Sales Offices in Principal Cities • Export Office: 50 Church St., New York 7, N.Y.

Bids Asked—Low Bidders—Contracts Awarded—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. WETZEL, M. E. SCIORRA, D. TARTAGLIA, Reports
J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

HEAVY CONSTRUCTION—BA

† **Me., Bangor**— STEAM DISTRIBUTION MANHOLE DRAINAGE—BA On Or About 10/23—U. S. Eng., 562 Congress St., Portland, modification of steam distr. manhole drainage, Dow Air Force Base, ENG-19-016-58-31. $50,000-$75,000. CD 9/9.

BUILDINGS—SLC

Vt., Rutland—INDUSTRIAL BLDG. SHELL—New Industries, Inc., 16 Center St., soon lets contract industrial bldg. shell, Industrial Park. $270,000. Webber & Erickson, 56½ Merchants Row, Rutland, Vt., engrs.

HEAVY CONSTRUCTION—LB & CA

VERMONT—State Dpt. Hys., State House, Montpelier, Leo & Roland Laperle, 30 Summer St., St. Johnsbury, Vt., CA **$229,471**, est. $200,000, hy. work, Rte. 108, S-0235 (1), Bids Sept. 26, CD 9/17.

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, Bids opened 9/30,
J. F. White Contg. Co., P. O. Box 358, Westwood, Mass., LB **$217,022**, est. $194,139, hy. work-George Washington Blvd., FA D-5-123 (2), Hull. CD 9/17.

Kennedy & Son, Inc., 314 Common St., Belmont, Mass., LB **$149,063**, est. $150,000, Contr. 1109, recreation and parking areas—Alewife Brook Parkway, Somerville, MASSACHUSETTS. Commonwealth of Mass., Metropolitan Dist. Comn., Parks Div., 20 Somerset St., Boston, Mass. Bids Sept. 30. CD 9/17.

Hyannis Marine Service, Arlington Heights Park, Hyannis, Mass., Separate Contracts **$800,000**, Marina Lewis Bay, HYANNIS, MASS.

Thomas W. Kidd, Jr., 144 Williamston St., Fall River, Mass., LB **$224,350**, est. $225,000, Contr. No. 4, sewer, Atwood Ave., JOHNSTON, R. I., Town, Sanitary Bd., Town Hall, Johnston, R. I., Bids Sept. 29, CD 9/15.

Shalmoon Industries Div., Warren Pipe Co., Phillipsburg, N. J., LB **$132,060**. (4 bidders) c.i. pipe and fittings, HARTFORD, CONN. Metropolitan Dist., 115 Broad St., Hartford, Conn. Bids Sept. 25. CD 9/23.

BUILDINGS—LB & CA

▲ **H. P. Cummings Constr. Co.**, 14 Prospect St., Ward, Mass., CA **$1,049,000** est. $1,000,000, HOSPITAL addn., alterations, EXETER, N. H. Exeter Hospital, Inc., Buzzelle Ave., Exeter, N. H. Bids Sept. 23 CD 9/29, under LB.

▲ **Town, High School Planning & Constr. Comn.**, Hingham, Mass., rejected bids Sept. 11. JUNIOR HIGH SCHOOL addn., HINGHAM, MASS. LB **$1,129,800**. CD 9/17, under LB.

Clemenzi Constr. Co., 50 Rantoul St., Beverly, Mass., CA Est. $360,000, SCHOOL and CONVENT, Bowler St., LYNN, MASS. St. Pius R. C. Church, Chancery Office, 1 Lake St., Brighton, Mass. Bids Sept. 18. CD 9/14.

Oxford Constr. Corp., 59 Oxford St., Somerville, Mass., CA Est. $300,000, PLANT, Bartlett St., MARLBORO, MASS. Dedham Development Trust, 785 Providence Pike, Dedham, Mass. Atkins & Merrill, Inc., Boston Post Rd., South Sudbury, Mass., lessee. Roy R. Cichetti, 71 Oakdale Rd., Newton, Mass., archt. CD 9/18/56.

▲ **Fontaine Bros. Inc.**, 40 Hendricks St., Chicopee Falls, Mass., CA **$1,011,026**, est. $1,000,000, PARKING GARAGE, Hillman St. and Harrison Ave., SPRINGFI,ELD, MASS. City, Off-Street Parking Comn., City Hall, Springfield, Mass. Bids Sept. 17. CD 9/23, under LB.

Brad Realty, 1060 Ridge Rd., Hamden, Conn., Owner Builds, $150,000, GARAGE and OFFICE BLDG., 2215 Dixwell Ave., HAMDEN, CONN. Pedersen & Tilney, 111 Whitney Ave., New Haven, Conn., archts. J. Carlson, Jr. 433 Howe Ave., Shelton, Conn., engr. Austin & Warner, 871 W. Main St., West Cheshire, Conn., mech. engrs. CD 9/25.

Industrial Constr. Co., 120 Prospect Ave., Hartford, Conn., CA $350,000, comtemporary design, laminated wood, wood, brick CHURCH, Zion St., HARTFORD, CONN. St. James Episcopal Parish, 75 Zion St., Hartford, Conn. Awarded Oct. 2. CD 4/25.

Wm. A. Mauser, 345 N. Main St., West Hartford, Conn., Owner Builds, $350,000 Bishop's Corner SHOPPING CENTER addn., Bishop's Corner, Albany Ave., WEST HARTFORD, CONN. Henry F. Ludorf, 95 Elm St., Hartford, Conn., archt. Walter J. Douglas Assocs., 1009 Farmington Ave., West Hartford, Conn., engrs. CD 9/12.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

Pa., Phila.—POLICE ACADEMY PISTOL RANGE—BA 10/20—Dpt. Procurement, City Hall Annex, Bid 4080, chain link fence work at Police Academy Pistol Range, State Rd. and Pennypack St., Plans deposit $10.
† **New York**—BA 10/23—U. S. Eng., Engineer Park, Buffalo Zone 7, dredging new north entrance to Buffalo Harbor. CD 10/1, under LB.

Pa., Allentown—PRIMARY RUNWAY—BA 11/12—Lehigh-Northampton Airport Auth., at office Comrs. Lehigh Co., Court House Annex, 523 Hamilton St., reconstr. part existing runway and site preparation work for new 5,000 ft. runway. Plans deposit $40. G. Edwin Pidock Co., 546-548 Hamilton St., Allentown, Pa., consult. engrs. CD 4/8.

BUILDINGS—BA

Pa., Phila.—LIBRARY—BA 10/20—Dpt. Procurement, City Hall Annex, Bid 4083, general constr. Bid 4085, heating, ventilating and air-conditioning, Bid 4086, electrical, Bid 4087, equipment, Bid 4088, sign work, for branch library alterations, imprvs., 40th and Walnut Sts. Plans deposit $10, CD 5/12.
† **Pa., Tobyhanna**—SIGNAL CORP DEPOT—BA About 10/31—U. S. Eng., 2635 Abbottsford Ave., Phila., restoration and repair of storm damage at Tobyhanna Signal Depot, ENG. 36-109-59-28. CD 1/9/51.
N. Y., Tonowanda—CITY HALL—BA 11/15—City, City Hall, constr. city hall. $547,000. Jacob Fruchtman, 2065 Sheridan Ave., Kenmore, archt. CD 6/6.

HEAVY CONSTRUCTION—LB & CA

M. L. Bayard & Co. Inc., 20 and Indiana Aves., Phila., Pa., CA **$408,300**, furnishing, del. twenty-six 100 ton capacity intake gate hoists complete with appurtenances for Lewiston Power Plant, Niagara Contr. No. NP 25, Spec. No. PA-N 23013, NEW YORK. Power Authority of State of New York, The Coliseum Tower, 10 Columbus Circle, New York 19, N. Y. Bids Sept. 11. CD 9/29, under LB.
R. I. E. Engineering Div., I. T. E. Circuit Breaker Co., Greensburgh, Pa., CA **$548,500**, furnishing, del. f.o.b. Niagara Switchyard Area, University Siding, Niagara Falls, 115 kv and 230 kv disconnecting switches for Niagara Switchyard in Lewiston, Niagara Co. Contr. NP 21, Spec. No. PA-N-25017, NEW YORK. Power Authority of State of New York, The Coliseum Tower, 10 Columbus Circle, New York 19, N. Y. Bids Sept. 25. CD 9/29, under LB.
▲ **NEW YORK**—State Dpt. P. Wks., State Office Bldg., Albany.
N. Y.—Serafini Constr. Co. Inc. & Dyer-Pitts Constr. Co., Inc., P. O. Box 265, Binghamton, N. Y., CA **$956,276**, reconstr. 5.32 mi. section Rte. 7 near Sanitaria Springs extending northeastward to Belden, Broome Co.;
N. Y.—William Higgins & Sons, 143 Perry St., Buffalo, N. Y., CA **$1,921,242**, constr. 0.39 mi. section Broadway Arterial Hy. (Rte. 130) near east city line in Buffalo, incl. grade separation structures to carry four-lane divided concrete hy. under seven tracks of New York Central R. R. and two tracks of Delaware, Lackawanna & Western R. R., Erie Co.;
N. Y.—E. G. DeLia & Sons Constr. Corp., 38 Campion Rd., New Hartford, N. Y., CA **$975,886**, reconstr. 2.27 mi. section Rte. 49 and 0.66 mi. access roads in vicinity of Carey Corners south of Marcy, Oneida Co.;
N. Y.—West Shore Concrete Co., Hillburn St., Suffern, N. Y. CA **$1,333,275**, reconstr. 3.81 mi. section Rte. 293, starting at Rte. 9W intersection and extending southwestward to Mine Lake, Orange Co. Grand total $5,186,679. Bids Aug. 7. CD 8/8, under LB.
▲ **T & Y Contg. Corp.**, 4814 Glenwood Rd., Brooklyn 3, N. Y., CA **$1,203,349**, combined sewers and grading Flatlands Ave. from Autumn Ave. to Eldert Lane, Eldert Lane from Flatlands to Wortman Ave., Wortman Ave. from Eldert Lane to Drew St. and in Drew St. from Wortman to Sutter Aves., BROOKLYN, N. Y. President Brooklyn Boro, Rm. 21, Boro Hall, Brooklyn 1, N. Y. Bids Sept. 9. CD 9/11, under LB.
Radory Constr. Corp., 94 Cherry Valley Rd., West Hempstead, N. Y., CA **$217,266**, Contr. No. 1003-B paving Westbury-Bellmore Rd. from Old Country Rd. to Motor Parkway and Motor Parkway from Westbury-Belmore Rd. to Pilgrim Lane, Salisbury, Town of Hempstead, MINEOLA, N. Y. County Executive Nassau Co., Old County Court House, Minneola, N. Y. Bids Sept. 16.
Anthony Grace & Sons, Inc., 151-45 6th Rd., Whitestone, N. Y., $77,840 (3 bidders), resurf. with b.conc. on existing granite block pavement E. 161 St. from Morris Ave. to 3rd Ave., NEW YORK, N. Y. President Bronx Boro, Rm. 207, Bronx County Bldg., 851 Grand Concourse, New York 51, N. Y. Bids Sept. 25 CD 9/19.
Venetian Contr. Co., 201 Barretto St., New York 59, N. Y., LB **$140,977** (3 bidders), curbing, recurbing, constr. and reconstr. sidewalks and paving with b.conc., also constr. and reconstr. receiving basins where necessary University Ave. from W. 165th to W. 167 Sts. and W. 167 St. from University to Sedgwick Aves. (New York, N. Y.);
Nicholas Di Menna & Sons Inc., 1515 Blondell Ave., New York 61, N. Y., LB **$245,475** (4 bidders), combined sewer and partial grading where necessary Conner St. from existing sewer in Hutchinson Ave. at Public Pl. to Givan Ave. in Givan Ave. from Conner St. to DeLavall Ave. (New York, N. Y.).
NEW JERSEY—Comr. State Hy. Dpt., Kenneth D. Rice, secy., 1035 Parkway Ave., Trenton, Bids opened 9/30, Samuel Braen's Sons, 662 Goffle Rd., Hawthorne, N. J., LB **$209,293**, (4 bidders), constr. OLD HOOK Rd. extension from point 400 ft. east of Kinderkamack Rd. to Valley St., Borough of Westwood, Bergen Co., CD 9/11.
Penn-Jersey Contractors, Inc., 1100 S. Broad St., Trenton, N. J., LB **$523,380** (11 bidders), main storm drain, Broad St. Park section, Hamilton Twp., TRENTON, N. J., Hamilton Twp. Comn., 2090 Greenwood Ave., Trenton, N. J., CD 7/10;
John Stamato & Co., Inc., Saddle River, N. J., LB **$167,440**, (11 bidders), branch storm drain, Broad St. Park area, Hamilton Twp. (Trenton, N. J.).
A. J. Schrader, Taylor, Pa., CA $544,180, Scranton flood protection proj. on Lackawanna River, incl. more than 2 mi. dredging and concrete works Scranton in Lackawanna Co., PENNSYLVANIA, Dpt. Forest & Waters, 512 Educ. Bldg., Harrisburg, Pa., Bids Aug. 29, CD 9/8, under LB.
PENNSYLVANIA—State Hy. Dpt., 506 North Office Bldg., Harrisburg,
Charles Riebe, 333 Columbia Ave., Palmerton, Pa. CA **$791,014**. 26,078 ft. crushed aggreg. base with bit. surf. 24 ft. wide; 5 bridges. T. R. 42, Locust and Catawissa Twps. Columbia Co. Bids Sept. 12, awarded Oct. 2. CD 9/17, under LB.
James H. McQuade & Sons Co., 417 Grant St., Pittsburgh, Pa., LB **$286,250**, est. $220,000, parking area and flag bastion in Point State Park at Pittsburgh's Triangle, PITTSBURGH, PA. General State Auth., 18th and Herr Sts., Harrisburg, Pa., Bids Oct. 1. CD 9/4.
† **The Interstate Amiesite Corp.**, Concordville, Pa., CA **$143,301**, resurf. Michaelsville Rd., APG, Contr. DA-18-001-509 ORD-5042 (IFB ORD-18-001-59-27), ABERDEEN PROVING GROUND, MD. Procurement Office, Aberdeen Proving Ground, Md. CD 11/19/52.
▲ **Gunnell Constr. Co. Inc.** 909 Tower Bldg., Wash., D. C., CA **$2,187,000**, sewerage treatment plant addns. WASH. D. C., D. C. Govt., Dpt. Sanitary Eng., 499 Pa. Ave. N. W. Wash., D. C. Bids Sept. 18. CD 9/22, under LB.

BUILDINGS—LB & CA

Caristo Constr. Corp., 26 Court St., Brooklyn 2, N. Y., CA Est. $344,000, I.L.A. MEETING HALL, 339-43 Court St., BROOKLYN, N. Y. 309 Union St. Corp., 343 Court St., Brooklyn 2, N. Y. Dominick Salvati & Son, 175 Joralemon St., Brooklyn 2, N. Y., archts. CD 4/18.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $44,000; other public works $73,000; industrial buildings $93,000; other buildings $344,000. Also Foreign projects of $100,000 and more in size of Interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England	Middle West
Middle Atlantic	West of Mississippi
South	Far West

PROPOSED WORK

Water Supply	Public Buildings
Sewers, Waste Disposal	Mass Housing
Bridges	Commercial Buildings
Streets & Roads	Industrial Buildings
Earthwork, Waterways	Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.

BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.

SOON LETS CONTRACT: SLC

LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.

CD dates shown are of Construction Daily Issue in which last previous report was published.

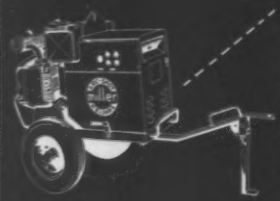
OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over
ENR	Engineering News-Record
CD	Construction Daily

For additional reports see Construction Daily.

NEW!



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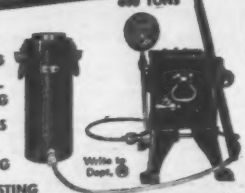

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▲ **Frouge Constr. Co., Inc.**, 141 North Ave., Bridgeport, Conn., LB $13,647,000 (7 bidders), general constr. Edgemere Houses Proj. No. NYS-79, Almeda Ave., Beach 51st St., Beach Channel Dr. and Beach 58th St., Queens Boro, EDGEMERE, N. Y. New York City Housing Auth., 299 Broadway, New York Zone 7, N. Y., Bids Sept. 30, CD 9/24;
Heating Maintenance Corp., 220 E. 138th St., New York 51, N. Y., LB $1,159,000 (5 bidders), heating for Edgemere Houses (Edgemere, N. Y.);
Novak & Co., 1503 East New York Ave., Brooklyn 12, N. Y., LB $1,367,737 (4 bidders), plumbing work for Edgemere Houses (Edgemere, N. Y.);
Meyerhawk Elec. Co., 126 W. 32 St., New York 1, N. Y., LB $1,049,000 (9 bidders), electrical work for Edgemere Houses (Edgemere, N. Y.).

▲ **Cauldwell-Wingate Co.**, 101 Park Ave., New York 17, N. Y., CA $7,192,000, general contract, Benjamin Franklin HOUSES (Proj. NYC-27) Section 1, incl. 5 buildings, Nos. 1, 2A, 2B, 3, 4 and 5 in area bounded generally by 2 Ave., E. 106 St., 3 Ave. and P. S. 117 Manhattan Boro, NEW YORK, N. Y. New York City Housing Auth., 299 Broadway, New York 7, N. Y. Grand total $8,619,933. Bids Sept. 9. CD 9/11, under LB;
H. Sand & Co., 11 Park Pl., New York 7, N. Y., CA $741,500, heating (New York, N. Y.);
C. K. Rehner, Inc., 49-20 Skillman Ave., Woodside, N. Y., CA $686,433, plumbing (New York, N. Y.).

Giles Place Apartments, Inc., 574 E. Fordham Rd., New York, N. Y., Owner Builds, $505,000, 6 story APARTMENT, west side of Giles Pl., north of Cannon Pl., NEW YORK, N. Y. CD 10/25.

Mardan Constr. Co., 5 Beekman St., New York 7, N. Y., CA Est. $500,000, altering APARTMENTS, 515 Park Ave., NEW YORK, N. Y. The Jewish Agency, Inc., 16 E. 66th St., New York 21, N. Y. Herbert Tannenbaum, 274 Madison Ave., New York 16, N. Y., archt. CD 4/28.

Rudin Contr. Co., 371 E. 135th St., New York 54, N. Y., LB $546,977 (9 bidders), general constr. for modernization and conversion of JUNIOR HIGH SCHOOL 99, 1st Ave. and E. 100 St., Manhattan Boro, NEW YORK, N. Y. Bd. Educ. City of New York, Bureau Constr., 42-15 Crescent St., Long Island City, N. Y. Bids Oct. 3. CD 9/19.

Abe Pozner—Middlesex Realty Co., 470 George RD., North Brunswick, N. J., Owner Builds, $450,000, 22 HOUSES, Dunham's Corner Rd., East Brunswick Twp., EAST BRUNSWICK (Old Bridge P. O.), N. J.

Wallace Eng. & Constr. Co., Martin and Lancaster Aves., Bryn Mawr, Pa., LB $472,500, est. $440,000, general contract INDUSTRIAL ARTS bldg. and utility expansion and constr. dining hall and kitchen, CHEYNEY, PA. General State Auth., 18 and Herr Sts., Harrisburg, Pa., Bids Oct. 1, CD 9/3.

Sycamore Heights Development Co., c/o Howard Greenhouse, archt., 1009 Park Pl., Wilmington, Del. Separate Contracts. $600,000, RESIDENTIAL DEVELOPMENT (35) Sycamore Heights, KENNETT SQUARE, PA.

Diller Plank, Inc., Willow St., Lancaster, Pa., LB $370,891, general contract INDUSTRIAL ARTS BLDG. for Millersville State Teachers' College, MILLERSVILLE, PA. General State Auth., 18th and Herr Sts., Harrisburg, Pa., Bids Oct. 1, CD 8/28.

Magazine Bros., 735 15th St. N. W., Wash., D. C., Owner Builds $700,000, APARTMENT, 8401 Manchester Rd., SILVER SPRING, MD. Corning & Moore, 1301 18th St. N. W., Wash., D. C., archts.

† **Coe Constr. Inc.**, 1018 Vermont Ave. N. W., Wash., D. C. LB $752,000 (8 bidders) constr. (except freight elevator) CAFETERIA and SERVICE BLDG. at Gallaudet College GS-R3 B-6275 WASH., D. C. Plans deposit $25. General Services Admin., Region 3, 7th and D Sts. S. W., Wash. D. C. William Denton, Jr., 1300 Connecticut Ave. N. W., Wash., D. C., archt. Bids Sept. 30 CD 8/29.

Ernest DiSabatino & Sons, 2601 W. 4 St., Wilmington, Del., CA $873,000 Gallaher ELEMENTARY SCHOOL, NEWARK, DEL. Newark Special School Dist., Newark, Del., Bids Sept. 18. CD 9/23.

▲ **A. A. Ruggerio**, Oakwood Hills, Wilmington, Del. Separate Contracts. $1,750,000, RESIDENTIAL DEVELOPMENT (120) Fairwyn Park, WILMINGTON, DEL.

SOUTH

HEAVY CONSTRUCTION—BA

† **Miss., Columbus** — READINESS CREW BLDG. — BA 10/28—U. S. Eng., P. O. Box 1169, Mobile, Ala., readiness crew bldg. Columbus Air Force Base, ENG-01-076-59-29B. CD 9/30.

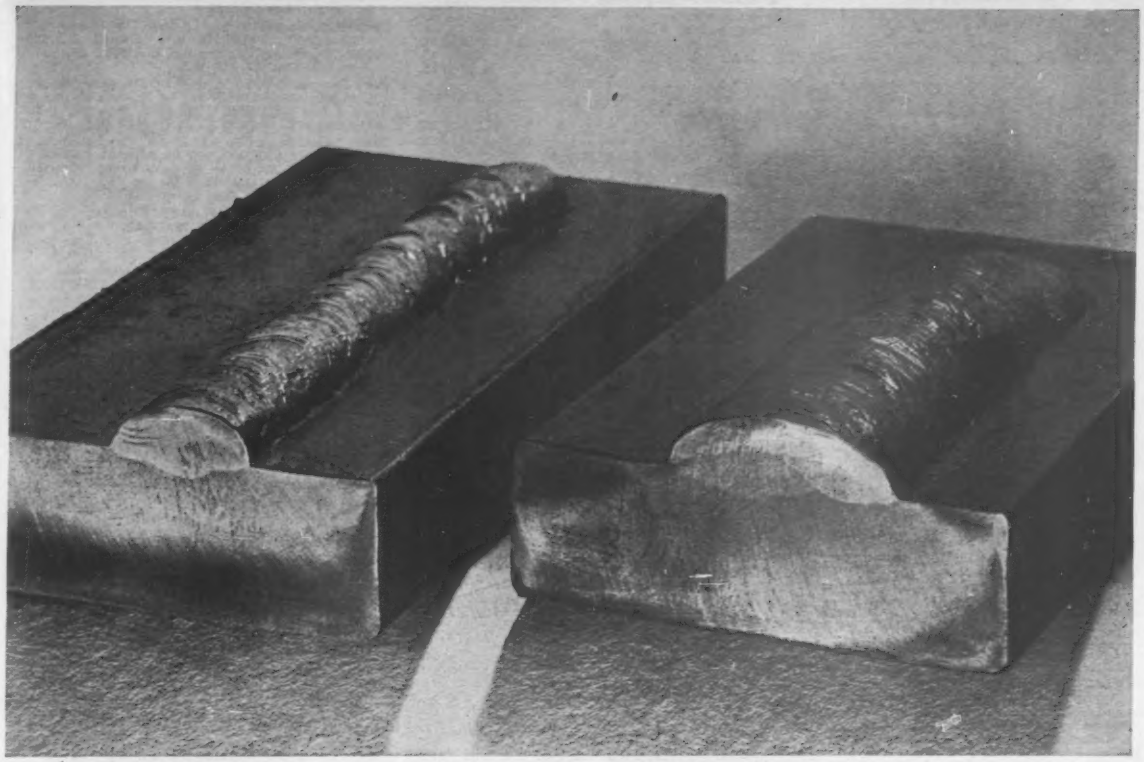
† **Fla., Panama City**—EMERGENCY POWER—BA On Or About 10/30—U. S. Eng., 2301 Grant St., Mobile, Ala., addnl. emergency power, for G. C. I. Power Bldg., Tyndall Air Force Base, ENG-01-076-59-30. CD 9/9.

▲† **Ga., Macon**—HOUSING—BA About 11/1—Procurement Officer, Robins Air Force Base, repairs, imprvs. to 500 Wherry Housing units. CD 9/18.

† **Fla., Eglin Air Force Base**—STORAGE FACILITIES—BA On Or About 11/5—U. S. Eng., 2301 Grant St., Mobile, Ala., constr. ordnance storage facilities, ENG-01-076-59-31. CD 9/6.

† **Fla., Eglin Air Force Base**—SQUADRON OPERATIONS BLDG.—BA On Or About 11/6—U. S. Eng., 2301 Grant St., Mobile, Ala., constr. Squadron Operations and Target Intelligence Bldg., ENG-01-076-59-32. CD 9/6.

† **Ga., Brunswick**—HANGAR—BA 11/12—Dist. P. Wks. Office, Sixth Naval Dist., Bldg. 13, U. S. Naval Base, Charleston, S. C., altering Hangar No. 2, U. S. Naval



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(Continued from page 138)

Air Station, Glynco, HBy-18479, Spec. 18495/58. Under $25,000. CD 8/5.

N. C., Burlington—BA 11/20—Mayor and City Council, City Hall, Contr. No. 1, general constr.; Contr. No. 2, plumbing work; Contr. No. 3, heating and ventilating work; Contr. No. 4, electrical work; Contr. No. 5, air-conditioning work; Contr. No. 6, interceptor sewer for constr. Haw River Sewage Treatment Plant, Interceptor sewer and appurtenances. Plans deposit Contr. 1, $100; Contracts 2, 3, 4, 5, $50; Contr. 6, $25. Glaze & Glaze, Inc., 2771 Paxton St., Harrisburg, Pa., consult. engr.; adv. ENR 10/16. CD 8/18.

BUILDINGS—BA

Ga., Jefferson—SCHOOL—BA 10/30—State School Bldg. Auth., Rm. 550, 244 Washington St. S. W., Atlanta, constr. South Jackson Elementary School, located in Jackson Co. Plans deposit $50. Heery & Heery, Southern Mutual Bldg., Athens, archts.

Ga., Atlanta—SCHOOL—BA 11/4—City, Bd. Educ., City Hall, 2 story, Rob't L. Craddock School, Plans deposit $50. CD 4/30/57.

Fla., Tampa—SCIENCE LABORATORY—BA 11/13—Bd. Control, Univ. of South Florida, science lab, classrooms and office. $927,000. Mark Hampton, Stowall Prof. Bldg., archt. CD 5/29.

▲† Ga., Macon—HOUSING—BA On Or About 11/18—Directorate of Procurement & Production, Civilian Employees Club, Bldg. 1683, Dormitory Area, City of Warner Robins, 150 family housing units, at Robins Air Force Base, Armed Services Housing Proj., No. 09-603-59-46, Plans deposit $100. CD 10/6.

HEAVY CONSTRUCTION—LB & CA

▲ VIRGINIA—Commonwealth of Va., Dpt. Hys., 1221 E. Broad St., Richmond,

Va.—Harrison Constr. Co., Inc., 1101 Western Ave., Pittsburgh, Pa., CA **$2,110,626**, 4-lane grading and draining, 6.85 mi. Interstate Rte. 81 from Rte. 611 east of Bristol to 0.27 mi. north of intersection of US 11-58 east of Abingdon, Washington Co. CD 9/29, under LB.

Va.—H. A. Nunn, Virginia, Va., CA **$79,812**, bit. surf. 3.2 mi. Rtes. 601 and 722 on loop from Rte. 732 at Buffalo Springs to US 58 near Aaron's Creek, Mecklenburg Co. Bids Sept. 24. CD 9/9.

SOUTH CAROLINA—State Hy. Dpt., Hotel Jefferson, Columbia,

Claussen-Lawrence Constr. Co., 1394 Gwinnett St., Augusta, Ga., CA **$614,373**, earth type base course and bit. surf. 4.275 mi. Int. Rte. 26, S.C. Docket No. 32.405, F.A. Proj. I-26-3 (6), Lexington Co. Bids Aug. 19. CD 8/27, under LB.

▲ GEORGIA—State Hy. Dpt., No. 2 Capitol Sq., Atlanta,

Ga.—E. A. Hudson & Sons, 1730 Hollywood Rd., Bolton, Ga., CA **$2,997,224** grading, paving 2 double bridges, 12.779 mi. Rome-Cartersville Rd., Proj. F-012(6) Bartow Co.;

Ga.—MacDonald Constr. Co., 1625 Northside Dr. N.W., Box 1655, Atlanta, Ga., CA **$2,248,910**, grading, paving frontage roads interchanges 2.463 mi. portions Atlanta-Macon Highway, Rt. 3, Proj. F-401-2(12) and F-074-2(7) Clayton Co.;

Ga.—Ocmulgee Constr. Co., McRae, Ga., CA **$645,881**, wid'n., surf. 17.537 mi. Commerce-Lavonia Rd., State Rt. 59. Fed. Aid Proj. DF-052-2(2), Franklin Co. Grand total $5,892,015. Bids Aug. 1, CD 8/6.

▲ McDonough Constr. Co. of Georgia, 27 Baltimore Pl. N.W., Atlanta, Ga., and **Parr-Cox Constr. Co.**, 120 Montgomery St., San Francisco, Calif., CA Est. **$6,000,000**, jet overhaul facility, ATLANTA, GA. Delta Air Lines, Inc., Atlanta Airport, Atlanta, Ga.

Olaf Otto, 412 E. Bay St., Savannah, Ga., CA **$388,000** football stadium, Bacon Park, SAVANNAH, GA. City, City Hall, Savannah, Ga. CD 11/24/53.

▲ FLORIDA—State Rd. Dpt., Tallahassee,

Fla.—Brinson-Allen Constr. Co., Box 1455 Tampa, Fla., CA **$654,022**, 4-lane constr. rock base with b. conc. surf. course and binder course converting 2 concrete slab deck bridges on composite concrete and steel piling 556 ft. in length from 2 lane to 4 lane, drainage structures etc. 1.138 mi. FAI Proj. No. DF-0121 (7) Job No. 3-10-3601 SR 45 and 90 (US 41), Collie Co.;

Fla.—Capeletti Bros., Inc., Box 1147, Hialeah, Fla., CA **$793,428**, grading, limerock base, b. conc. surf. course with binder course constr. 4 lane, 70 ft. bridge and 2 lane 74 ft. bridge of prestressed concrete slab unit on prestressed concrete pile bents; aluminum handrail etc. 3.499 mi. State Proj. Job No. 87630-3153, SR 58 19 SR 25, Dade Co. CD 8/29, under LB.

Cone Bros. Contg. Co., P. O. Box 1259, Tampa, Fla. LB **$190,425** sewage treatment plant, lift station, force mains, ARCADIA, FLA. City, City Hall, Arcadia Fla. Bids Sept. 26, CD 9/10.

R. H. Wright & Son, Inc., 1050 NE 5 Terrace, Fort Lauderdale, Fla., LB **$282,952**, apron, taxiway and sanitary sewer, Broward Co. International Airport, FORT LAUDERDALE, FLA. Broward Co. Bd. Comrs., Fort Lauderdale, Fla. CD 9/22.

Brooks Paving Co., Inc., 5607 NW 27 Ave., Miami, Fla., LB **$94,143**, Edenholme Storm Sewer imprvs., DR-52063, MIAMI, FLA. City Comn., Municipal Justice Bldg., 1145 NW 11 St., Miami, Fla. Bids Oct. 1. CD 9/22.

Intercounty Constr. Corp., 2100 N. Dixie Hy., Wilton Manor, Fort Lauderdale, Fla., LB **$431,218**, North Belle Meade Sanitary Sewer Imprvts., SR 349-D & S, MIAMI, FLA. City Comn., Municipal Justice Bldg., 1145 NW 11 St., Miami, Fla. Bids Oct. 1. CD 9/17.

▲ ALABAMA—State Hy. Dpt., Montgomery,

Newell Roadbuilders, Inc., Hope Hull, Ala., CA **$1,104,369**, grading, draining 6.767 mi. from near Barnett roads NE on Interstate Rt. 65, Conecuh and Escambia Counties; CA **$902,921**, grading, draining 8.244 mi. from NE of Atmore NE on Interstate T. Rte. 65, Escambia Co. Bids Aug. 29. CD 9/8.

ALABAMA—State Hy. Dpt., Montgomery, Zone 4, Bids opened 9/26,

Ala.—McKee Constr. Co., Jackson, Ala., LB **$158,392** 0.248 mi. bridges on road from Shortleaf to Demopolis and approach at French Cr. E. of Demopolis, Marengo Co.;

Ala.—Goodwyn-Williamson Co., Inc., Robinson Springs, Montgomery, Ala., LB **$357,002**, 0.169 mi. bridge and culvert on U. S. 72 SE of Athens, Limestone Co. CD 9/17.

Henry W. Greene, Box 4266, East Lake Station, Birmingham, Ala. CA **$84,118** elephant house for City Park, BIRMINGHAM, ALA., City, City Hall, Birmingham, Ala. CD 12/28/53.

Perusini Constr. Co., 1720 28 Ave. S. Birmingham, Ala., LB **$173,418**, 2000-seat coliseum for agricultural displays, sewers, plaza, HUNTSVILLE, ALA. City, City Hall, and Morgan Co., Courthouse, Huntsville, Ala. CD 8/19.

† Stigler Constr. Co., 201 Fulton St., Greenwood, Miss., CA **$50,210**, concrete launching ramps north side, Sardis Reservoir, Panola and Lafayette Counties, CIVENG-22-052-590-19, MISSISSIPPI. U. S. Eng., P. O. Box 60, Vicksburg, Miss.

† Ford Constr. Co., Dyersburg, Tenn., LB **$384,430** restoration Henderson-Catahoula levee WABPL consisting 316,000 cu. yd. levee and 9,000 cu. yd. grav. surf., Inv. 59-44, Item W-58, St. Martin Parish, LOUISIANA. U. S. Eng., foot of Prytania St., New Orleans, La. Bids Sept. 23. CD 9/5.

▲† T. L. James & Co., Inc., Ruston, La., CA **$1,486,591**, furnishing gates and operating machinery for Port Allen Lock CIVENG-16-047-58-294, LOUISIANA. U. S. Eng., foot of Prytania St., New Orleans, La.

Pointe Coupee Electric Membership Corp., New Roads, La., Force Account, **$170,000**, 31 mi. distr. lines, increasing capacity of transformers, etc., LOUISIANA. CD 8/27/56.

James P. Cross, New Iberia, La., LB **$213,203**, (7 bidders), Bayou Petite Anse, 1958 Drainage Program, consisting 1,340,000 cu. yd. excav. and bridge lengthening and betterment, NEW IBERIA, LA. Iberia Parish Police Jury, Court House, New Iberia, La. Bids Sept. 25. CD 9/3.

▲ KENTUCKY—Commonwealth of Ky. Dpt. Hys., Frankfort,

Ky.—W. M. Hooper, P.O. Box 288, Caneyville, Ky., CA **$658,551**, b. conc. surf. 1.853 mi. Hardinsburg-Leitchfield Rd., S 68 (1), Breckinridge Co.;

Ky.—Roy Ryan Sons Co., 5416 Booneville Hy., Evansville, Ind., CA **$620,427**, b. conc. surf. 1.062 mi. Glen-Dean-McDaniels Rd., bridge and approaches at North Fork of Rough River approx. 1.5 mi. southeast of Axtel S 712 (1) SP 14-133, Breckinridge Co. Bids Sept. 5. CD 9/12, under LB.

KENTUCKY—Commonwealth of Ky., Dpt. Hys., Frankfort, rejected bids Aug. 22, bit. surf. 3.179 mi. Pine Mt. School-Big Laurel Rd. RS 48-468, Harlan Co., LB **$94,990**; b. conc. surf. 0.776 mi. US 68-Ky. 272, Connection Rd. SP 25-295, Christian Co. LB **$139,972**. CD 8/29, under LB.

▲ KENTUCKY—Commonwealth of Ky., Dpt. Hys., Frankfort, Bids opened 10/3,

Ky.—Wells & Wells Constr. Co., Rte. 3, Glasgow, Ky., LB **$113,112** (3 bidders) traffic bound surf. 4.678 mi. Beech Grove-Trammel Rd. from Pope-Halfway Rd. S 700 (1) RS 2-635, Allen Co.;

Ky.—Sam Nally Co., Bardstown, Ky., LB **$252,112** (4 bidders) traffic bound surf. 5.378 mi. Alumbaugh-Arvel Rd. from Arvel extending northerly to Estill County Line, S 707 (1) SP 55-469, Jackson Co.;

Ky.—J. B. Michael & Co., Inc., P.O. Box 5895, Memphis 4, Tenn., LB **$2,698,133** (2 bidders) high type surf. 4.412 mi. Paducah-Benton Rd. from jct. of bridge and Reeder Sts. in Paducah extending southeasterly to point US 62 approx. 0.5 mi. northeast of Rediland, F 163(10) FG 163 (11 & F 58(9) SP 73-32 & SP 73-432, McCracken Co.;

Ky.—O. L. Depp, Rte. 2, Owensboro, Ky., LB **$175,722** (3 bidders) traffic bound surf. 1.348 mi. Deer Lick-Jason Rd. from Deer Creek-Agnes Rd. 2 mi. north of Deer Lick and 1 bridge, SP 71-426, Logan Co.;

Ky.—R. E. Gaddie, Inc., P.O. Box 343, Bowling Green, Ky., LB **$84,836** (3 bidders) traffic bound surf. 1.531 mi. b. conc. surf. 0.891 mi. SP 107-745 & SP 107-845, Simpson Co. CD 9/17.

BUILDINGS—LB & CA

R. R. Marquis, 2229 County St., Portsmouth, Va., LB **$857,321** (15 bidders) PUBLIC HEALTH CENTER, NORFOLK, VA. City, City Hall, Norfolk, Va. Bids Oct. 3. CD 9/10.

Crump, Inc., 4031 Bigelow Blvd., Pittsburgh, Pa., CA **$696,860**, LIBRARY, BETHANY, W. VA. Bethany College, Bethany, W. Va. CD 1/16.

Darin & Armstrong, 2041 Fenkell Ave., Detroit 38, Mich., CA **$708,000**, LABORATORY BLDG. and RESIDENCE HALL, Radio Astronomy Project, GREEN BANK, W. VA. Associated Universities, Inc., 10 Columbus Circle, New York, N. Y. Bids Sept. 23. CD 8/21.

Watson & Yeargan, Box 116, Jesup, Ga., LB **$599,200**, Davisboro Colored ELEMENTARY SCHOOL, addn. and mech. remodeling Washington Co. WHITE HIGH; cafeteria and mech. remodeling of Sandersville Elementary SCHOOL; cafeteria addns., remodeling of Tennille Elementary SCHOOL, SANDERSVILLE, GA State School Bldg., Auth., 244 Washington St. S. W., Atlanta, Ga. Stevens & Wilkinson, 157 Luckie St. N. W., Atlanta, Ga., archts. Bids Sept. 25.

Rigdon-Hock, Homerville, Ga., LB **$697,719**, Lowndes Co. HIGH SCHOOL, VALDOSTA, GA. Lowndes Co. Bd. Educ., Courthouse, Valdosta, Ga. Bids Sept. 25, postponed from Sept. 18. CD 9/5.

Harry Elson, 1095 E. 30 St., Hialeah, Fla., Owner Builds, $125,000, WAREHOUSE, W. 20 St. between W. 4 and 8 Aves., HIALEAH, FLA. R. J. Schneider, 1431 Flamingo Way, Hialeah, Fla., archt. CD 9/4.

Gaines Constr. Co., 15450 NW 27 Ave., Opa Locka, Fla., Owner Builds, $500,000, 106 one story, 23 x 58 CB-S RESIDENCES, SW 80 Ave. and SW Terrace, Fountainbleu Gardens, MIAMI, FLA. Gerard Pitt, 4375 Ingraham Hy., Miami, Fla., archt.

† Jack Culpepper, P.O. Box 3065, Tallahassee, Fla., CA **$348,295**, ARMY RESERVE TRAINING CENTER, ENG-01-076-59-10, TALLAHASSEE, FLA. U. S. Eng., 2301 Grant St., Mobile, Ala. Bids Sept. 16. CD 9/4.

Mayben & Son, 512½ Chestnut St., Gadsden, Ala., CA **$452,000**, Carlisle Park SCHOOL, GUNTERSVILLE, ALA. City, Bd. Educ., City Hall, Guntersville, Ala.

Charles Carter & Co., Inc., Box 1270, Baton Rouge, La., LB **$446,253** (10 bidders) Capitol Avenue ELEMENTARY SCHOOL, Capitol Ave. and N. 43 St., BATON ROUGE, LA. East Baton Rouge Parish School Bd., 805 St. Louis St., Baton Rouge, La. Bids Oct. 2. CD 9/24.

Encrete, Inc., 2360 Dorothy Lane, Dayton, O., CA Est. over **$500,000**, 1 story, brick, redwood exten. MOTEL, cocktail bar, etc., LEXINGTON, KY. Lawson Jaffee, 733 Wales Dr., Dayton, O.

Allen Bros., 3536 Walker Ave., Memphis, Tenn., CA Est. **$350,000**, MOTOR COURT, NASHVILLE, TENN. Holiday Inns of America, c/o contractor. CD 5/19.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

Wis., Potosi—BA 10/23—Village, Village Hall, sewage treatment plant and sewers. Plans deposit $15, Davy Eng. Co., Inc., 524 Main St., La Crosse, engr.

† O., Dayton—SAC DISPERSAL FACILITIES—BA 10/28—U.S. Eng., P.O. Box 50, Louisville 1, Ky., constr. utilities extens. SAC Dispersal Facilities, service tunnel extens., 4,300 lin. ft. encased power duct, 6,500 lin. ft. concrete encased telephone lines, and 31,800 lin. ft. high voltage cable. $250,000. CD 3/12.

Wis., Appleton—BA 10/28—City, City Hall, 36 x 1330 ft. bascule bridge on S. Oneida St., $740,000. Plans deposit $20. Fenner-Brey Engr. Corp., 928 S. 10 St., Manitowoc, engrs. Chas. W. Voder & Assocs., 3505 W. Center St., Milwaukee, archts. CD 8/1/57.

Wis., Shawano—BA 10/28—City, City Hall, sewage treatment plant addn. $300,000. Plans deposit $40. Banister Eng. Co., 310 N. Snelling Ave., St. Paul, Minn., engr.

† Illinois—MISSILE STORAGE—BA 10/29—U.S. Eng. 475 Merchandise Mart, Chicago 54, Ill., conversion of 1 existing-type B underground missile storage structure from Nike-Ajax to Nike-Hercules, modification of Hydraulic elevator, incl. related mechanical and electrical work and minor grading around existing Kennels, AAA Site C-03D, Belmont Harbor, Chicago, Eng-11-032-59-22.

BUILDINGS—BA

Mich., Detroit—PRECINCT STATION, etc.—BA 10/21—At office City Engineer, City-County Bldg., Zone 26, general constr., mechanical and electrical and exterior work, 1 story, bsmnt., 13,050 sq. ft. police precinct station with 1 story garage, and demolition all existing bldgs. CD 1/26/26.

Wis., Madison—SCHOOL—BA 10/28—Bd. Educ., Odana Elementary School. $350,000. Plans deposit $10, J. Klund & Assocs., Box 2175, archts. CD 8/13.

O., Conneaut—SCHOOL—BA 11/13—Bd. Educ., 401 Mill St., Southeast Elementary School. $585,000. Plans deposit $50. Ward & Conrad, 266 Hanna Bldg., Cleveland 15, O. Bids Sept. 30 rejected. CD 9/5.

BUILDINGS—SLC

▲ Ill., Chicago—LABORATORY—Presbyterian-St. Lukes' Hospital, 1753 Congress St., soon lets contract 7 story, Southeast Laboratory Bldg., Harrison St. between Wood and Paulina Sts. $3,500,000. Skidmore Owings & Merrill, 30 W. Monroe St., archt. CD 1/8/56.

O., Cincinnati—HOSPITAL—Cincinnati Osteopathic Hospital Assn., 2076 Elm, Norwood, soon lets contract 1 story, bsmnt., 58 bed hospital, Kenwood and Galbraith Sts. $600,000. Frankenberger, Junker & Lensky, 2910 Woodburn St., archts. and engrs. CD 6/5.

HEAVY CONSTRUCTION—LB & CA

B. J. Construction Co., Inc., 134 Pleasant Ridge, Covington, Ky., LB **$118,890** (4 bidders) replacement of bridge on Compton Rd., CINCINNATI, O. Bd. Comrs. Hamilton Co., Cincinnati, O. Bids Sept. 27. CD 9/5.

▲ Wm. Passalcqua Builders, Inc., 16828 Kinsman Rd., Cleveland 20, O., LB **$1,620,000**, est. $1,250,000 (11 bidders) Lakefront Airport Terminal Proj., CLEVELAND, O. City of Cleveland, Dpt. Port Control, Wm. J. Rogers, dir., City Hall, Cleveland 14, O. Bids Oct. 2. CD 9/30.

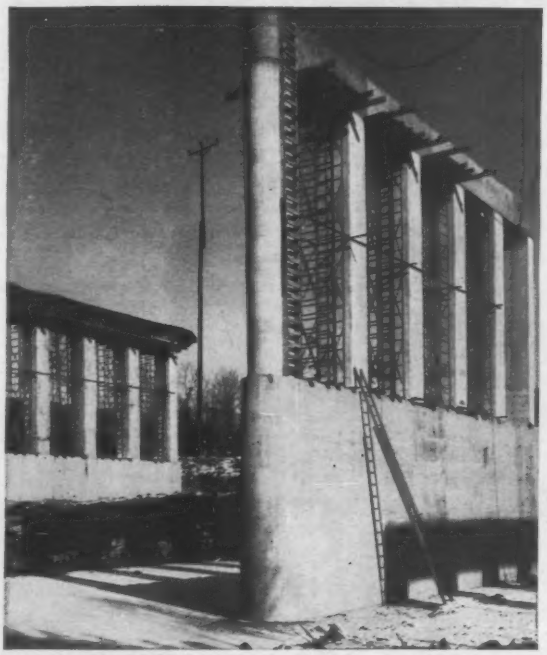
† George W. Timmons Constr. Co., 780 W. Lane Columbus, O. LB **$712,636**, est. $791,459 (7 bidders) readiness crew bldg., Lockbourne Air Force Base, ENG-46-022-59-2, COLUMBUS, O. U. S. Eng., 237 Fourth Ave. Huntington-18, West Va. Bids Sept. 30. CD 8/22.

(Continued on page 143)

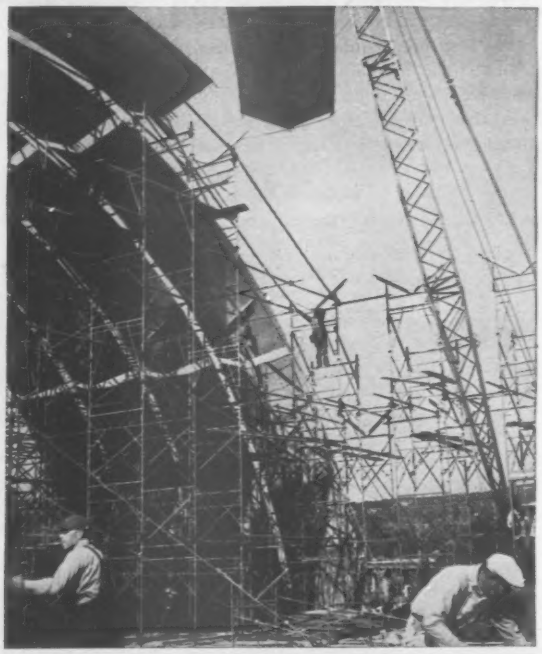
Shoring Methods...

A Picture Report on Efficient Ways to Shore Concrete . . . by Patent Scaffolding Co.

FAST METHOD MOVES SHORING WITH FORMS—Soaped sills, placed under shoring legs, provide fast movement of 960 sq. ft. sections of "Trouble Saver" Shoring with formwork, to succeeding drophead panels on this slab job at Kentile, Inc., So. Plainfield, N.J. Method uses only half the shoring (462 frames) and formwork usually required, and saves the contractor, Fred J. Brotherton, Inc., considerable time, equipment and costs. Each section is moved, as shown, to its new location in just 15 minutes.



EASY-TO-ERECT PIER SHORING—"Trouble Saver"® Steel Shoring, made with 3'-wide ladder frames, provides ample support for beams on several pier capitols on this bridge in Palmyra Township, Pa. Frames, spaced 3' apart, shore capitols 3'6"-wide by 4'-thick. Built-in ladders give workers quick access for forming and stripping. Willis, Paul & Proctor, general contractor. P.S. Co. offers engineering layouts specifically detailed for every job.



CORRUGATED BARREL ROOF SUPPORT—Support for this unusual corrugated, reinforced concrete roof is provided by "Trouble Saver" Shoring towers with 104 special V-shaped cradle frames. These units, designed by P.S. Co., were set on top of the shoring frames to conform to roof segments, which measure 10' 3½" wide and 2'9" deep in cross section. Holy Trinity H. S., Trinidad, Colo. Platt-Rogers Constr. Co., gen. contr.

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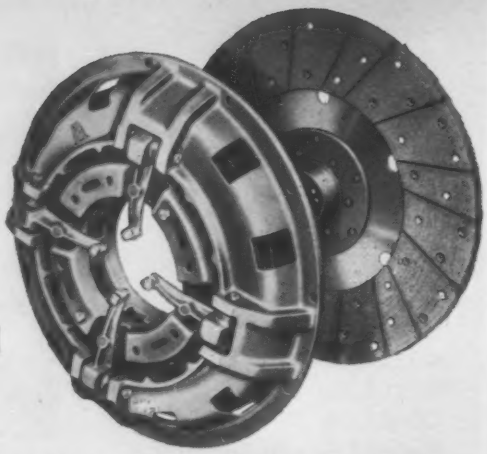

Lipe TC Constant Capacity Clutches available in 15½" and 17" Single and Double Plate Sizes—torque capacity range of 715 to 3700 ft. lbs.

Simplicity is the key characteristic of this clutch. No vastly complicated power trains to deadline equipment for days or weeks . . . no $200 tear-downs to replace a $2 part.

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The high thermal capacity of the TC is provided by the massive plate, ribbed for rapid radiation and cooled by effective currents of air. Internal cooling protects springs from overheating and loss of temper.

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Syracuse 1, N.Y.

MANUFACTURERS OF AUTOMOTIVE CLUTCHES AND MACHINE TOOLS

(Continued from page 140)

A. Gaudio & Sons, 23500 Lakeland Blvd., Cleveland 23, O. LB $568,453 est. over $500,000 (8 bidders) Babbitt Rd. Sanitary Sewer, EUCLID, O. City of Euclid, City Hall, 585 E. 222 St., Cleveland 23, O. Bids Sept. 29. CD 9/11.

▲ INDIANA—State Hy. Comn., John Peters, chn., State House Annex, Indianapolis,

A. L. Dougherty Co., 3333 Sheffield St., Hammond, Ind., CA $2,255,755, rein.-con., Contr. R-4504 I-03-1 (11) 8, Clark Co. Bids July 29. CD 8/5, under LB.

▲ INDIANA—State Hy. Comn., John Peters, chn., State House Annex, Indianapolis, Zone 4, Bids opened 9/30,

Ind.—McMahon Constr. Co., Rochester, Ind., LB $448,-141, est. $483,185 (3 bidders), c. conc. pavement, Contr. R-4574, U-771 (14), Howard Co.; LB $384,-302, est. $540,173 (5 bidders), bit. base wid'n. and resurf., Contr. RS-4581, DF-85 (17), Marshall Co.;

Ind.—Muncie Paving Co., Cornbread Rd., Muncie, Ind., LB $313,907, est. $384,803 (6 bidders), concrete base wid'n. and bit. base wid'n. and bit resurf., Contr. RS-4579, DF-83 (14) DF-83 (15) DF-83 (16), Madison Co.; LB $97,504, est. $121,272 (3 bidders), bit. base wid'n. and resurf., Contr. RS-4582, DF-130 (16) ST-130, Delaware Co.;

Ind.—Contracting & Material Co., 1235 Dodge St., Evanston, Ill., LB $3,165,513, est. $3,548,419 (6 bidders), c. conc. pavement, Contr. R-4458, I-03-1 (5), Clark Co.;

Ind.—McCalman Constr. Co., 619 Section, Danville, Ill., LB $1,843,483, est. $1,919,956 (3 bidders) c. conc. pavement, Contr. R-4544, I-05-1 (5), Vermillion Co.;

Ind.—Harry Berry, Inc., Scottsburg, Ind., LB $285,-584, est. $293,072 (2 bidders), concrete base wid'n. and bit. resurf. Contr. R-4547, DF-212 (6), Jefferson Co.;

Ind.—Gast Constr. Co., 216 S. Columbia St., Warsaw, Ind., LB $1,268,232, est. $1,481,116 (5 bidders) concrete base wid'n. and bit. resurf., Contr. R-4568, DF-13 [illegible], Marion and Hancock Counties;

Ind.—Olinger Constr. Co., 416 4 St., Huntingburg, Ind., LB $1,199,447, est. $1,306,650 (4 bidders), bit. pavement mac. base, bit. base wid'n. and resurf., Contr. R-4570. US-168 (3), S-491 (4), Dubois Co.;

Ind.—L. H. Gunsaullus & Son, Inc., S. Milford Rd., Kendallville, Ind., LB $344,710, est. $346,546 (2 bidders), bit. pavement, mac. base, bit. base wid'n. and resurf., Contr. R-4571, S-183 (3), Randolph Co.;

Ind.—Moellering Constr. Co., Engle Rd., Fort Wayne, Ind., LB $374,625 (3 bidders), c. conc. pavement and bit. resurf., Contr. R-4573 U-365 (9), F-365 (10), Allen Co.;

Ind.—Grady Asphalt, Inc., 6101 College Ave., Indianapolis, Ind., LB $83,906, est. $102,548 (5 bidders), bit. resurf., concrete base wid'n. and bit. resurf., Contr. RS-4576, DF-46 (9), Madison Co.;

Ind.—Rieth-Riley Constr. Co., 311 W. Madison St., Goshen, Ind., LB $605,038, est. $870,129 (5 bidders), concrete base wid'n. and bit. resurf., Contr. RS-4577, DF-48 (20), La Porte Co.;

Ind.—McMahon Ill. Corp., Rochester, Ind., LB $97,-684, est. $105,176 (2 bidders), bit. base wid'n. and resurf., Contr RS-4578, DF-75 (17), Benton Co.;

Ind.—Mohr Constr. Co., Inc., 1420 S. Union St., Kokomo, Ind., LB $241,338, est. $299,788 (7 bidders) bit. base wid'n. and resurf., Contr. RS-4580, DF-83 (17), Madison and Grant Counties;

Ind.—L. P. Cavett Co., Lockland, O., LB $323,388, est. $419,225 (7 bidders), Contr. RS-4583, DF-156 (13), Jackson Co.;

Ind.—Phend & Brown, Inc., Milford, Ind., LB $203,-317, est $349,984 (8 bidders), concrete base wid'n. and bit. resurf., Contr. RS-4584, S-312 (4), Huntington Co. CD 9/17.

▲ INDIANA—State Hy. Comn., John Peters, chn., State House Annex, Indianapolis, Zone 4. Bids opened 9/30,

Ind.—Brown Bros., 3245 W. St. Joseph St., Lansing, Mich., LB $509,083, est. $544,506, (4 bidders), 3 continuous rein.-con. slab spans over State Rd. 32, incl. approach grading and c. conc. pavement 0.045 mi. E. of Present U. S. 27 (E. of Winbeam spans over N.Y.C. R.R. and Public Rd., incl. approach grading and c. conc. pavement 0.201 mi., N. of State Rd. 32 (E. of Winchester), Proj. DF-448(8), Contr. 4564, Randolph Co.; LB $304,067, est. $350,741, (7 bidders), 6 rein.-con. girder and continuous steel beam spans over N.Y.C. R.R, C.S.S. and S.B.E. R.R., and Ardmore Trail, W. of South Bend on proposed U. S. Rd. 20 (South Bend By-pass), Proj. DF-720(3), Contr. 4312, St. Joseph Co.;

Ind.—J. L. Wilson, Bloomfield, Ind., LB $116,090, (2 bidders), 4 continuous rein.-con. girder spans over Interstate Rte. 05, S. of Covington on Co. Rd., east of Vermillion-Fountain Co. Line, Proj. I-05-1(15), Contr. 4534, Fountain Co.; LB $144,881, est. $151,239, (9 bidders), 4 continuous rein.-con. girder spans over Interstate Rte. 05, incl. approach grading 0.011 mi. on County Rd. at S. Edge of Pleasant View, Proj. I-05-3(13), also 3 rein.-con. girder spans over Little Sugar Creek, incl. approach grading and comp. aggr. base with bit. surf. 0.05 mi. on Frontage Rd. SE of Pleasant View, Proj. I-05-3(13). Contr. 4560, Shelby Co.;

Ind.—William Waltz, North Manchester, Ind., LB $76,981, est. $82,493, (5 bidders), rein.-con. arch (U.F.) span over Ely Run, incl. approach grading and c. conc. pavement 0.151 mi., N. of State Rd. 1, Proj. DF-610(4), Contr. 4566, Allen Co.;

Ind.—A. T. Gravelie, 3815 Massachusetts Ave., Indianapolis, Ind., LB $221,701, (9 bidders), 4 continuous rein.-con. girder spans over Interstate Rte. 05, incl. approach grading and comp. aggr. base with hot b. conc. surf. 0.583 mi. on relocated Vandergriff Rd., Southeast of Post Rd. (NE of New Bethel), Proj. I-05-3(7), Contr. 4451, Marion Co.;

Ind.—Canonie Constr. Co., South Haven, Mich., LB

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26-3

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$664,738, est. $811,495, (7 bidders), 8 rein.-con. girder and continuous rein.-con. girder spans over West Fork White River, incl. approach grading and c. conc. pavement 0.17 mi. and grading and comp. aggr. base with hot b. conc. surf. 0.215 mi. relocated 75 S. N. of 71 St. on N. Keystone Ave. N. of Indianapolis, Proj. US-165(5), Contr. 4456, Marion Co.;

Ind.—Mesbberger Stone Co., Columbus, Ind., LB $105,300, (2 bidders), 3 continuous steel beam spans over Indian Kentucky Creek, incl. aproach grading and comp. aggr. base with bit. surf. 0.116 mi., County Rd. N. of Brooksburg, Proj. S-479(1), Contr. 4501, Jefferson Co.;

Ind.—Tousley Constr. Co., Inc., 925 E. St. Clair St., Indianapolis, Ind., LB **$393,067**, est. $406,203, (7 bidders), 4 continuous rein.-con. girder spans over Acton Rd. incl. approach grading and comp. aggr. base with bit. surf. 0.011 mi. N.W. Shelby Co. Line on U. S. 421, Proj. I-05-3(11), also rein.-con. arch over Wildcat Creek, incl. approach grading and rein.-con. pavement 0.068 mi. N.W. Shelby Co. Line on U. S. 421, Proj. I-05-3(11), also 3 continuous rein.-con. slab spans over Wildcat Creek, incl. approach grading and comp. aggr. base with bit. surf. 0.053 mi. N.W. Shelby Co. line on U. S. 421, Proj. I-05-3(11), also 3 continuous rein.-con. slab spans over Wildcat Creek, incl. approach grading and comp. aggr. base with bit. surf. 0.053 mi. N.W. Shelby Co. Line on U. S. 421, Proj. I-05-3(11), also 3 continuous steel beam spans over Buck Creek, incl. approach grading and comp. aggr. base with bit. surf. 0.055 mi. N. W. Shelby Co. Line on U. S. 421, Proj. I-05-3(11), Contr. 4559, Marion Co. CD 9/16.

ILLINOIS—State Div. Hys., Centennial Bldg., Springfield.

Rein & Schultz, Inc., 119 E. Washington Ave., Madison, Wisc. CA **$616,425**, wid'n., resurf. 11.53 mi. Ill. 80 between Jo Daviess and Carroll Counties. Bids July 29. CD 8/1.

ILLINOIS—Dpt. P. Wks. & Bldgs., Div. Hys., Centennial Bldg., Springfield,

R. A. Cullinan & Sons, Tremont, Ill., CA **$847,258** widen 5.84 mi. and resurf. 8.17 mi. Ill. 116 from Metamora to Roanoke, Woodford Co. Awarded Sept. 30. CD 9/17, under LB.

Chatham Paving Co., 8458 S. State St., Chicago, Ill. LB **$82,310**, grading, 8 in. c. conc. paving and imprv. roadways of 9 alleys at various locations, CHICAGO, ILL. Bd. Local Imprvts., City Hall, Chicago 2, Ill. Bids Sept. 28. CD 9/12.

Capitol Cement Co., 6214 N. Pulaski Ave., Chicago, Ill., LB **$76,717**, sidewalk constr., c. conc. 6 ft. wide, in a sys. of streets (Chicago, Ill.)

Herlihy Mid-Continent Co., 407 S. Dearborn St., Chicago, Ill., LB **$540,341**, grade separation, 885 ft. precast prestr. deck girder bridge; 4-lane, concrete piers, 91 St. and South Route Expressway, CHICAGO, ILL Bd. Comrs. Cook Co. Cook Co. County Bldg., Chicago 2, Ill., Bids Sept. 30. CD 9/19.

▲ **Iowa Bridge Co.**, P. O. Box 7, Hyde Park Station, Des Moines, Iowa, CA Est. **$1,000,000**, bridge over Cal-Sag Channel, Palos Park, CHICAGO, ILL. Wabash R.R. Co. Wm. J. Hadley, ch. engr., 611 Olive St., St. Louis, Mo. CD 7/23.

▲ **Standard Paving Co.**, 308 W. Washington St., Chicago 6, Ill., LB **$1,196,697**, c. conc. paving, 10 in. thick, 42 ft. wide, concrete curb and gutter, rein. conc. bridge S. Park Ave. Thornton Twp., CHICAGO, ILL. Bd. Comrs. Cook Co. County Bldg., Chicago 2, Ill. Bids Sept. 30, CD 9/19;

Saice Paolo & Co., 7940 Grand Ave., Elmwood Park, Ill., LB **$845,558**, furnishing, installing channelizing medians (mesh type) various locations (Chicago, Ill.);

Rock Road Constr. Co., 5915 N. Rogers Ave. Chicago, Ill., LB **$499,149**, pave East Lake Ave., c. conc. base course with curb and gutter 18 to 42 ft. wide, bit. binder and surf. courses East Lake Ave., Northfield & New Trier Twps. (Chicago, Ill.);

Deckert Corp., 6340 Capulina St., Mortgon Grove, Ill., LB **$217,080**, relocate mass transit facilities constr. tracks, signals, electric work, drainage and appurtenances, Congress St. Expressway, Proviso Twp. (Chicago Ill.);

Robert R. Anderson Co., 4550 W. Palmer St., Chicago, Ill., LB **$109,011**, constr. 4 lane road, concrete base course, wid'n. 20 to 24 ft. bit. binder and surf. courses, Wolf Rd., Hillside and Berkeley Co. (Chicago, Ill.)

† **McAnn & Co., Inc.**, P. O. Box 201, Springfield, Ill. LB **$334,678**, runway remedial work (FY-57) Belleville, ENG-11-032-59-7 SCOTT AIR FORCE BASE, ILL. U. S. Eng., 475 Merchandise Mart, Chicago 54, Ill. Bids Sept. 18. CD 8/26.

▲ **WISCONSIN**—State Hy. Comn., State Office Bldg., Madison, Bids opened 10/2,

Wis.—Arthur Overgaard Co., Elroy, Wis., LB **$306,395** (5 bidders), grade, base and single aggr. bit. surf. 6.626 mi. Mauston-Necedah Rd., C. T. Hy. Q, Contr. 1, Projs. DS 0588(2) and S 0588(3), Juneau Co.; LB **$95,303** (11 bidders) base course 5.737 mi. Hudson-Eau Claire (U. S. H. 12-S. T. H. 65 Section) Rd., Interstate Hy. 94, Contr. 1, Proj. I-94-1(26)4, St. Croix Co.;

Wis.—Ryan, Inc., Janesville, Wis., LB **$192,419**, (10 bidders), grade, subbase 1.495 mi. U. S. H. 14-Illinois State Line Section Rd., Interstate Hy. 90, Contr. 1, Proj. I-90-3(11)185, Rock Co.;

Wis.—Kramp Constr. Co., 2765 S. 27 St., Milwaukee, Wis., LB **$560,136** (11 bidders), grade, base, Structures B-67-37, B-67-38 and C-67-18, 9.095 mi. North Prairie-Waukesha Rd., S. T. Hy. 59, Contr. 1, Proj. DF 063-1(11), Waukesha Co.;

Wis.—Adolph Cherney, Maribel, Wis., LB **$83,403**, (4 bidders), grade, base and b. conc. 0.533 mi. Eighth St., City of Clintonville, U. S. Hy. 45, Contr. 1, Proj. DF 051-1(10), Waupaca Co.;

Wis.—G. A. Watson, Barneveld, Wis., LB **$77,517**, (10 bidders), grade, subbase and base 2.166 mi. South County Line-S. T. H. 33 Road, C. T. Hy. I, Contr. 1, Proj. DS 1421(1), La Crosse Co.;

Wis.—Ben Ruesch, Medford, Wis., LB **$85,847**, (3 bidders), grade, base course and base 4.215 mi. West County Line-Kempster Rd., C. T. Hys. H and J, Contr. 1, Projs. DS 0714(4) and DS 1184(2), Langlade Co. CD 9/12.

Speedway Constr. Co., 6001 N. 91 St., Milwaukee, Wis., LB **$99,781**, (4 bidders), intercepting sewer in W. Mill Rd., MILWAUKEE, WIS. Sewerage Comn. of the City of Milwaukee, Jones Island, Milwaukee, Wis. Bids Sept. 29. CD 9/17.

Hedrich Constr. Co., Chilton, Wis., LB **$204,949**, general contract water treatment plant, NEENAH, WIS., City, City Hall, Neenah, Wis. Bids Sept. 26. CD 9/17.

▲† **Gilliland Constr. Co.**, SW, Alpena, Mich. & **B. H. Sargent, Inc.**, West Branch, Mich., CA **$1,173,025**, constr. utilities, Wurtsmith Air Force Base, OSCODA, MICH. U. S. Eng., 600 E. Jefferson St., Detroit, Mich. CD 9/9.

MICHIGAN—State Hy. Office, Escanaba.

I. L. Whitehead Co., 1107 West Easterday Ave., Sault Ste. Marie, Mich., CA **$566,887**, grading, drainage structures, 24 ft. aggreg. base course, 20 ft. b. conc. surf. 4.11 mi. M 94 from M-28 east and south, Munising, M 02022 C1-UM 02022 C2-R, Alger Co. Bids Aug. 13. CD 8/20, under LB.

BUILDINGS—LB & CA

R. G. Smith Constr. Co., 1249 Dueber S. W., Canton, O. CA Est. **$100,000**, 12,000 sq. ft. TRUCK TERMINAL, AKRON, O. Roadway Express, Inc., 147 Park St., Akron, O. CD 9/15/50.

▲ **A. Siegler & Sons**, 5117 Lee Rd., Bedford, O., Own Forces. **$10,000,000**. 500 HOME DEVELOPMENT similar to Southgate development, AVON, O. CD 1/3.

M. Marcus Building Co., 2109 Reading Rd., Cincinnati, O., LB **$125,000** (14 bidders) SERVICE BLDG. for heavy highway equipment, machinery. CINCINNATI, O. W. W. Williams Co., 641 Reading Rd., Cincinnati, O. CD 5/22.

Knowlton Constr. Co., 133 Columbus St., Bellefontaine, O., CA **$857,700**, CHEMISTRY BLDG. addn., Ohio State University, COLUMBUS, O. Ohio Dpt. P. Wks., State Depts. Bldg., Columbus, O. CD 10/1, under LB.

Abco Constr. Corp., 4217 N. Main St., Dayton, O. CA Est. **$750,000**, 1 story, bsmnt., 115 x 208 ft. DEPARTMENT STORE, paved parking, S. Smithfield Rd. near Wilmington Pike, DAYTON, O. McCook Corp., 4217 N. Main St., Dayton, O.

Sever-Williams Constr. Co., Washington Courthouse, O. LB **$349,990**, general contract 2 elementary SCHOOLS, FRANKLIN O. Franklin Bd. Educ., Franklin, O. CD 11/13.

Gibbons-Grable Co., Mellet Bldg., Canton, O., CA Est. **$450,000** (11 bidders), 40,000 sq. ft. PLANT, NORTH CANTON, O. The Hoover Co., North Canton, O. Bids Sept. 21, awarded Oct. 1. CD 9/9.

Philip Engoglia, 6777 McKenzie St., Cleveland, O. CA Est. **$750,000**, four 1 suite brick, concrete APARTMENTS, PARMA, O. Brookpark-Hauserman Development Co., c/o Kleine & Assoc., archts., 419 Caxton Bldg., Cleveland 15, O. CD 4/23.

William Grossman, 222 E. 63 St., Indianapolis, Ind., Owner Builds, **$550,000**, SHOPPING CENTER, on 8-acre site, U. S. 31, south edge of GREENWOOD, IND.

Missner Constr. Co., 2940 N. Campbell Ave., Chicago, Ill., CA **$150,000**, 1 story, 40,000 sq. ft. WAREHOUSE, 5252 S. Kolmar Ave., CHICAGO, ILL. Bernard Edwards Co., 5252 S. Kolmar Ave., Chicago, Ill. Gordon T. Ronneberg & Assoc., 868 S. Plum Grove Rd., Palatine, Ill., archts. CD 9/19.

Fred Berglund & Sons, 8410 South Chicago Ave., Chicago, Ill., LB **$400,000**, general contract remodeling BANK CHICAGO, ILL. Lincoln National Bank, 3959 Lincoln Ave., Chicago, Ill.

Robert G. Regan Co., 201 N. Ottawa St., Joliet, Ill. CA **$933,000**, 75 unit HOUSING Project No. 11-24-1 between Water and Des Plaines St. and Wallace Ave. and between York Ave. Osgood St. and Eastern Ave., bit. paving, concrete sidewalks, curbs, gutters JOLIET, ILL. Housing Authority of Joliet, 150 N. Ottawa St., Joliet, Ill. CD 9/30, under LB.

Wimmer-Krause Constr. Co., 1910 St. Louis Ave., East St. Louis, Ill., LB **$462,269**. SCHOOL Range and Jerome Lane, St. Clair Co. for Cahokia Commonfields School Dist. 187, St. Clair Co., CAHOKIA (EAST ST. LOUIS P. O.) ILL. State of Illinois School Bldg. Comn. 5 N. Van Buren, Joliet, Ill. Bids Sept. 17. CD 9/9.

Robert Blum Co., 203 N. Wabash Ave., Chicago, Ill. CA **$750,000**, 84 unit Cross Roads MOTEL addn., incl. cocktail lounge, swimming pool, 4200 N. Mannheim Rd., SCHILLER PARK, ILL. Owner c/o general contractor. Schiller & Frank, 23 E. Jackson Blvd., Chicago, Ill., archts.

E. H. Marhoefer Jr., Co., 2424 25th St., Franklin Park, Ill., CA **$500,000**, 1 story, 50,000 sq. ft. FACTORY and OFFICE BLDGS. addn, SKOKIE, ILL. Powers Regulator Co., 3400 Oakton St., Skokie, Ill. Sessions Engineering Co., 1 LaSalle St., Chicago, Ill., engr. CD 1/4/50.

▲ **Drake Bros.**, Rt. 83 and Hintz Rd., Prospect Heights, Ill., Own Forces **$2,250,000**, 90 HOMES, N S Drake Terrace, south of Prospect Dr. WHEELING, ILL. Dewey & Pavlovich, 3244 W. Lawrence Ave., Chicago, Ill. archt.

Maas Bros. Constr. Co., Watertown, Wis., CA **$578,116**, general contract HIGH SCHOOL, WHITEWATER, WIS., Bd. Educ., Whitewater, Wis. Bids Sept. 23. CD 8/19.

(Continued on page 146)

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11

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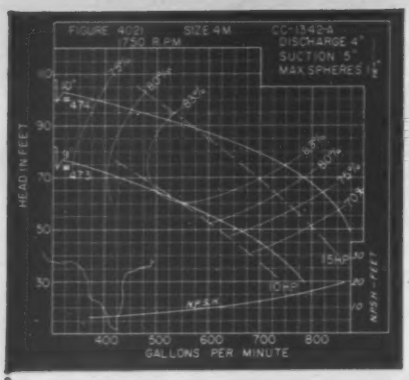

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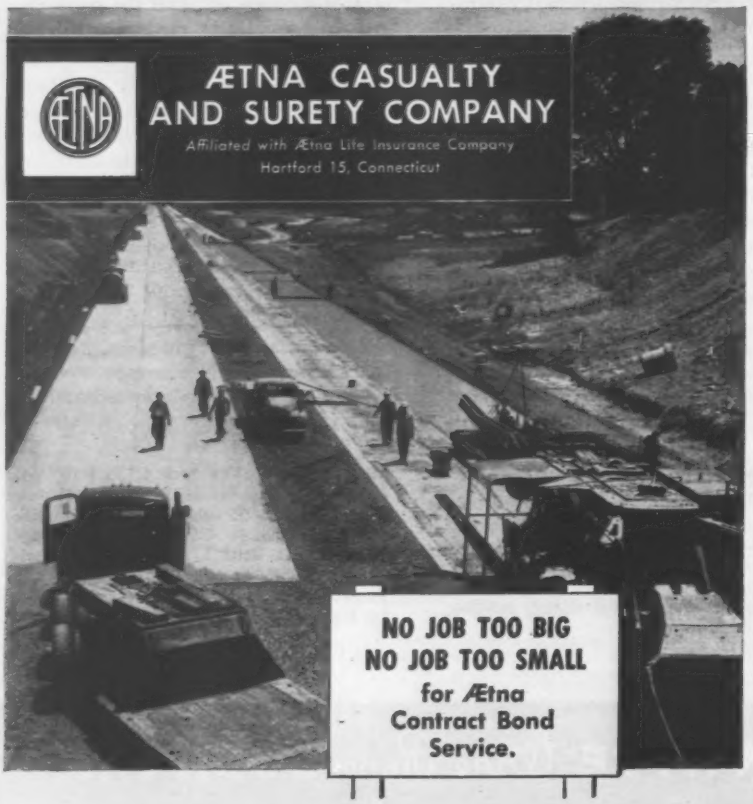

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(Continued from page 144)

Hamano Constr. Co., Manitowoc, Wis., LB $594,479, (6 bidders), general constr. 3 story, bsmnt. addn. and remodeling 4 story, bsmnt., St. Francis HOSPITAL ESCABANA, MICH. Sisters of Third Order of St. Francis, Escanaba, Mich. W. Butler Co., 1300 Minnesota Bldg., St. Paul, Minn., archts. Bids Oct. 1. CD 9/18.

▲ **Seth E. Giem & Assocs.**, 426 West South St., Kalamazoo, Mich., LB $1,094,000, RESIDENCE HALL No. 2, Western Michigan University, KALAMAZOO, MICH. State Bd. Educ., Capitol Bldg., Lansing, Mich. BIDS Sept. 17. CD 9/4.

▲ **Walter L. Course & Co.**, 12740 Lyndin St., Detroit, Mich., CA Est. $15,000,000 Wonderland SHOPPING CENTER, LIVONIA, MICH. Henry A. Alper & Abe Green, c/o Louis G. Redstone & Allen Agree, Inc., archt; 14330 Natl. Bank Bldg., Detroit, Mich.

A. N. Hickson, Inc., 14841 Wyoming St., Detroit, Mich., LB $667,900, less alternate, $14,900, Elsmere Pearson JUNIOR HIGH SCHOOL, REDFORD, MICH. Bd. Educ., Redford Union School No. 1, 26440 Puritan, Detroit, Mich. Bids Sept. 15. CD 9/4.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

Minn., Austin—BA 10/23—Mower Co., Bridge No. 7232, 50 ft., 80 ft., 50x28 ft. beam spans over Red Cedar River 2 mi. south of here, SP 50-661-03 (CSAH 28), Minn., Proj. S 6742 (3). $73,000. Plans deposit 90c. G. E. Carlson, co. hy. engr.

Mo., St. Louis—COMMUNITY CENTER, etc.—BA 10/28—City, Bd. P. Service, 304 City Hall, Zone 3, brick, concrete, stone, steel, etc. David P. Wohl community and recreational center, ground floor, bsmnt. and mezzanines, etc. $840,000. Russell, Mullgardt, Schwarz, Van Hoefen, 1620 Chemical Bldg., 721 Olive St., Zone 1, Mo., archts. R. L. Eason & Assocs., 5423 Southwest Ave., Zone 10, Mo., structural engrs. Harry F. Wilson Assocs., Inc., 4908 Delmar Blvd., Zone 10, Mo. mechanical engr. CD 7/12.

† **Arkansas**—BA About 10/29—U. S. Eng., Santa Fe Bldg., 1114 Commerce St., Dallas, Tex., and U. S. Eng., Chamber of Commerce Bldg., 616 South Boston Ave., Tulsa, Okla., bank stabilization, warings bend, extension to revetment, River Mile 146.0 Arkansas River Watershed, Arkansas River, right bank of Arkansas River, 3½ mi. southeast of Wrightsville, Pulaski Co. CD 6/25/46.

BUILDINGS—BA

Mo., Fulton—STUDENT HOUSING GROUP—BA 10/23—Westminster College, Bd. Trustees, Proj. MO-23-CH-33D, student housing group, incl. two 2 story, part bsmnt. bldgs. 42x133 ft. brick, concrete, etc., student housing group. $375,000. Fred C. Sternberg, 7912 Bonhomme Ave., Clayton, Zone 5, archt. Smith-Hanlon-Zirheide-Levy, Inc., 4010 Lindell Blvd., St. Louis, Zone 8, engr. CD 6/17.

▲ **Mo., Kinloch (South Kinloch Park P.O.)**—HOUSING—BA 10/28—Kinloch Housing Auth., 305 Lix Ave. and P.O. Box 178, Proj. MO-5-2, frame, masonry, etc., 16 apartments (100 units) and community bldg. $1,000.000. Plans deposit $100. Hellmuth, Obata & Kassabaum, Inc., 315 N. 10th St., St. Louis, Zone 1, archt., R. L. Eason & Assocs., 5423 Southwest Ave., St. Louis, Zone 9, mechanical engrs. Belt & Given, 8920 Manchester Rd., St. Louis, Zone 17, structural engrs. CD 8/8/56.

† **Kan., Topeka**—ARMY RESERVE TRAINING FACILITIES—BA 10/29—U. S. Eng., 1800 Federal Office Bldg., Kansas City 6, Mo., army reserve center training facilities, IFB 59-16.

† **Mo., St. Joseph**—ARMY RESERVE CENTER TRAINING FACILITIES—BA 10/29—U. S. Eng., 1800 Federal Office Bldg., Kansas City 6, Mo., army reserve center training facilities, IFB 59-17.

† **Ark., Pine Bluff**—TRAINING CENTER—BA 11/6—U. S. Eng., P.O. Box 867, Little Rock, 1 story, masonry bldg., approx. 11,700 sq. ft. concrete floor and foundation; masonry-unit wall; steel joist roof framing; poured in place gypsum on deck; built-up roofing and summer, winter air conditioning, also 2,500 sq. ft. vehicle storage shed, Army Reserve Training Center. Eng. 03-050-59-18. CD 9/6.

HEAVY CONSTRUCTION—LB & CA

Commonwealth Constr. Co., Plerz, Minn., CA $116,081, 141.18 mi. telephone line, Winthrop and its rural area, Sibley and McLeod Counties, MINNESOTA. Winthrop Telephone Co., Winthrop, Minn. Bids Sept. 17. CD 9/10.

Ulland Bros., Inc., Box 549, Austin, Minn., LB $97,183 (2 bidders), grade, sand-grav. sub-base, grav. base, plant mixed bit. base, plant mixed bit. surf. storm sewers and concrete curb and gutter, BUFFALO, MINN. Wright Co., Buffalo, Minn. Bids Sept. 30. CD 9/15.

R. M. Starry, Long Prairie, Minn., LB $104,342 (6 bidders), grade, sub-grade corrections, grav. base and road mixed bit. surf. 3.4 mi. between Kent St. in Roscoe and CSAH 12, ST. CLOUD, MINN. Stearns Co., St. Cloud, Minn. Bids Sept. 29. CD 9/11.

† **W. K. Ingram Constr. Co.**, West Memphis, Ark., CA $538,547, est. $479,776 (7 bidders) constr. levees and channel alterations, Unit II, Sec. II, Little Sioux River near Turin, CIVENG-25-066-59-24, IOWA. U. S. Eng., 1709 Jackson St., Omaha 2, Neb. Bids Oct. 2. CD 9/10.

City, Bd. P. Service, 304 City Hall, 12 Blvd. and Market St., St. Louis 3, Mo., rejected bids Sept. 30, furnishing 38½ mi. steel piling 43 to 71 ft. long for constr. new municipal dock, foot of North Market St. on Mississipi River, ST. LOUIS, MO. Est. $580,000. CD 9/2.

(Continued on page 148)

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(Continued from page 146)

† **La Crues Dredging Co.,** 140 Dearborn St., Chicago, Ill., LB $224,468 (4 bidders) pilot canal excavation Missouri River, Sioux City to Omaha at Sandy Point-Tysons Bends, vicinity of Blair, Washington Co., ENG-25-066-59-21, NEBRASKA and IOWA. U. S. Eng., 1709 Jackson St., Omaha 2, Neb. Bids Oct. 2. CD 9/9.

Doolittle Constr. Co., 331 N. Waco, Wichita, Kan., LB $447,988 Schedules 1, 2, and 3; LB $461,988 Schedules 1, 2, and 4 (5 bidders) Missouri River Basin Project, Frenchman-Cambridge division, constr. spillways, wasteways, and siphons Nos. 1 and 9 for Culbertson canal, Schedules 1 and 2 are for all work except that in alternate Schedules 3 or 4, which is for spillway, wasteway 19.2 and siphon No. 9, Schedule 3, all of siphon No. 9 barrel is monolithic-concrete pipe, buried and alternate Schedule 4, part of the No. 9 siphon barrel is 90 in. diam. plate-steel pipe, constr. as an overhead crossing of Crews Canyon, DC-5101, NEBRASKA. Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo. Bids Sept. 30. CD 8/27.

▲† **Wunderlich Constr. Co.,** 2555 Pulgas Ave., East Palo Alto, Calif. LB $7,351,557, est. $7,980,227, furnishing labor and materials for Foss Dam, Washita Basin Proj., Clinton, Spec. No. DC-5100, OKLAHOMA. Bids Oct. 1. CD 8/28.

Lamb Co. Electric Cooperative, Inc., Littlefield, Tex., Owner Builds, $100,000, rural electric lines, Lamb Co., TEXAS. CD 1/8.

† **Mike Hooks, Inc.,** Box 135, Lake Charles, La., CA $208,100 (base bid) dredging Gulf Intracoastal Waterway, Colorado River in Matagorda Bay, levee and spillway repairs, Matagorda Co., ENG-41-243-59-16, TEXAS. U. S. Eng., 721 Santa Fe Bldg., Galveston, Tex. Bids Sept. 25. CD 8/13/53.

† **Technical Constructors Co.,** 12820 Coit Rd., Dallas, Tex., LB $86,267, unmanned gap filler facilities, ENG-41-443-58-81, MASON AIR FORCE STATION, TEX., U. S. Eng., Box 1229, Galveston, Tex. Bids Sept. 17. CD 8/21.

Las Colonias Civic League, 520 Queretaro St., San Antonio, Tex., Day Labor, $80,000, recreational center, playgrounds, 500 ft. lake front, SAN ANTONIO TEX.

† **Kirkhof Electric Co.,** 2450 Buchanan S.W., Grand Rapids, Mich., LB $49,170 (8 bidders) one 230-kv, one 115-kv, and one 13.5-kv control board sections; two sets of carrier-current relaying equipment; one set of carrier-current control and line over-current ground relays; and four carrier-current transmitter-receiver sets for Dawson County and Bismarck substations and Fort Peck powerplant, Fort Peck and Missouri River Basin projects, DS-5088, MONTANA, Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo. Bids Sept. 30. CD 8/25.

† **Kelman Electric & Mfg. Co.,** 1667 Main St., Los Angeles, Calif., LB $74,900 (7 bidders) Schedule 1, two 230-kv power circuit breakers, Fort Peck Proj., DS-5098, MONTANA, Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo. Bids Sept. 30. CD 8/25.

† **D. W. Falls, Inc.,** P.O. Box 95, Albuquerque, N. M., LB $46,157, Rio Grande channel enlargement and protective works, Angostura diversion works,. Middle Rio Grande Project, Spec. 500C-61, NEW MEXICO. Bureau Reclamation, Dpt. Interior, Albuquerque, N. M. Bids Sept. 18. CD 9/17/57.

BUILDINGS—LB & CA

C. O. Field Co., 2942 Harriet Ave., Minneapolis, Minn., CA $636,400, 90,000 sq. ft. CANDY PLANT near Rankin St. between West Seventh St. and Mississippi River, ST. PAUL, MINN. Pearson Candy Co., 411 Broadway, St. Paul, Minn. Bids Aug. 5. CD 8/25, under LB.

▲ **John Epple Constr. Co.,** 1417 Hickory St., Columbia, Mo., CA $1,098,206 with accepted alternates, general constr. 3 story, 90,000 sq. ft., brick, steel, concrete, etc., ARGICULTURE BLDG. addn. on Campus of University of Missouri, COLUMBIA, MO. Curators University of Missouri, 116 Jesse Hall, Columbia, Mo. Bids Sept. 10. CD 9/17, under LB;
Natkin & Co., 1924 Oak St., Kansas City, Mo., CA $536,697, heating, ventilating and air-conditioning Agriculture Bldg. (Columbia, Mo.).

▲ **Winn-Senter Co.,** 901 W. 43, Kansas City, Mo., CA Est. $2,500,000, 11 story APARTMENT, 9th and Pennsylvania Ave., Quaility Hill Section, KANSAS CITY, MO. Lewis F. Kitchen, Lon Bldg., Kansas City, Mo. CD 5/1.

Fischer & Frichtel, Inc., 8703 St. Charles Rock Rd., St. Louis 14, Mo., Owner Builds, $850,000, 110 DWELLINGS, Siemer's acres sub-division on Buckley Road, mile south Lemay Ferry Rd., MEHLVILLE (ST. LOUIS 23 P.O.), MO.

C. Rallo Contg. Co., Inc., 5000 Kemper Ave., St. Louis 10, Mo., CA Est. $650,000, 31,000 sq. ft. colonial style brick, wood trim, etc. Kriegshauser West MORTUARY, incl. parking garage and parking areas, Olive St. Rd. at Harvest Lane, OLIVETTE (ST. LOUIS 14 P.O.) MO. Kriegshauser Mortuaries, 4238 S. Kingshighway, St. Louis 9, Mo. Rime A. Dusard, 9215 Ladue Rd., Ladue 24, Mo., archt. Burssel & Viterbo, Arcade Bldg., St. Louis 1, Mo., engrs.

▲ **Alport Constr. Co.,** 502 Title Guaranty Bldg., St. Louis 1, Mo., LB $2,764,600 Base Bid, 8 story, ground and sub-floors, 64,800 sq. ft. brick, stone, rein.-con. David P. Wohl MEMORIAL, Audubon between Euclid and Kingshighway, ST. LOUIS, MO. Washington University, Lindell and Skinker Blvds., St. Louis 5, Mo. Bids Sept. 23. CD 9/23.

Peterson, Garbi & Joseph, Inc., 123 E. 9 St., North Little Rock, Ark., CA Est. $300,000 FEED MILL, EL DORADO, ARK. Cemeron Feed Mills, 124 E. 5th St., Little Rock, Ark. CD 9/25.

C. C. Collie, Jr., 610 3 St., Little Rock Ark., CA $100,000, brick, concrete blocks PLANT, FORT SMITH, ARK. W. H. "Bill" Lillard, c/o Fort Smith Cotton Oil Co., 723 N. 1 St., Fort Smith, Ark. Baldor Electric Co., 4353 Duncan Ave., St. Louis 10, Mo., lessee.

Refinery Engineering Co., 108 N. Trenton St., Tulsa, Okla., CA Est. $600,000, altering REFINERY, near DUNCAN, OKLA. D-X Sunray (sub. Sunray Mid-Continental Oil Co.) Duncan, Okla.

Hannaford Constr. Co., P.O. Box 1717, Tulsa, Okla. CA Est. $175,000, 1 story, brick, concrete, steel aluminum siding WAREHOUSE and OFFICE, TULSA, OKLA. Metal Goods Corp., 8800 Page Ave., St. Louis 14, Mo. Syl G. Schmidt & Assoc., 2819 Railway Exchange Bldg., St. Louis 1, Mo., archts.-engrs. Bids Aug. 15.

Rudy Steffler, Builder, 4923 Hull St., Houston, Tex., Purchase and Hire, $391,000, 34 DWELLINGS; $379,500, 33 DWELLINGS, HOUSTON, TEX. CD 9/29.

Owner, 4607 Locust Ave., Lubbock, Tex., Day Labor, $100,000, GRAIN WAREHOUSE, LUBBOCK, TEX. CD 9/19.

Ray Ellison, Builder-Developer, Hy. 90 West, San Antonio, Tex., Purchase and Hire, $355,000, 30 DWELLINGS; $346,150, 28 DWELLINGS, SAN ANTONIO, TEX. CD 9/17.

Douglas L. Saunders, Builder, 833 Bandera Rd., San Antonio, Tex., Purchase and Hire, $357,500, 36 DWELLINGS, SAN ANTONIO, TEX. CD 9/23.

Arthur J. Puig, Contracter, 2335 Vance-Jackson Rd., San Antonio, Tex., Owner Builds, $360,000, 40 low-priced DWELLINGS, SAN ANTONIO, TEX. CD 9/23.

▲ **Meade & Mount Constr. Co.,** Denver Club B, Denver, Colo., CA $3,609,837 George Washington HIGH SCHOOL, DENVER, COLO., School Dist. No. 1, 414 14 St., Denver, Colo. Bids Sept. 3;
Dependable Plumbing, 4700 W. Colfax Ave., Denver, Colo., CA $877,497, mechanical work George Washington High School (Denver, Colo.). CD 9/15.

Frank O. Bennett, Jr., Box 5396, Lubbock, Tex., CA $659,460, Lea ELEMENTARY SCHOOL, LOVINGTON, N. M. Lovington Municipal Bd. Educ., Lea Co., Lovington, N. M. Bids July 1, (Correction—contractor). CD 7/22, under CA.

FAR WEST

HEAVY CONSTRUCTION—BA

† **Utah, Hill Air Force Base**—STORM DRAINAGE SYSTEM, etc.—BA 10/23—U. S. Eng., 180 New Montgomery St., San Francisco, Calif., storm drainage sys., relocation of existing work and incidental work, ENG.-04-203-59-11B. CD 10/1.

† **Idaho, Mountain Home**—OFF-SITE UTILITIES—BA 10/24—Base Procurement Office, Mountain Home Air Force Base, off-site utilities, 270 unit Capehart Housing, Mountain Home Air Force Base, IFB 10-603-59-19.

† **Calif., Point Mugu**—FUEL STORAGE IMPRVS.—BA 10/28—Eleventh Naval Dist., 1220 Pacific Hy., San Diego, constr. fuel storage imprvs. at Naval Air Missile Test Center, Spec. 19449-58. $150,000. CD 9/17/57.

† **Calif., Point Mugu** — COMMUNICATION SYS. — BA 10/30—Eleventh Naval Dist., 1220 Pacific Hy., San Diego, modification communication sys. at Naval Air Missile Test Center, Spec. 19447-58. $150,000. CD 9/17/57.

Calif., Los Angeles—BA 10/31—Los Angeles Co. Flood Control Dist., 2250 Alcazar St., constr. Storm Drain Bond Issue Proj. 51, in Centenella Ave. from Ballona Creek to McCune Ave. $875,200. CD 11/7/52.

† **Calif., Point Mugu**—BACHELOR QUARTERS—BA 11/4—Eleventh Naval Dist., 1220 Pacific Hy., San Diego, constr. 200-man bachelor quarters, San Nicholas Island Naval Air Missile Test Station, Spec. 17665-58. $750,000. CD 9/17/57.

HEAVY CONSTRUCTION—LB & CA

IDAHO—State Hy. Dpt., Boise, Bids opened 9/30,
Idaho—Pickett & Nelson, Idaho Falls, Idaho, LB $228,823, reconstr. roadway, constr. plant mix bit. surf. 8.504 mi. State No. 28, seal coat 12 mi. State No. 28, reconstr. roadway and bit. treatment 0.822 mi. U. S. 93, Lemhi Co.;
Idaho—A. D. Stanley, 2901 Main St., Boise, Idaho, LB $78,088, constr. roadway, road mix bit surf., 16 ft. concrete culvert on 4.006 mi. Amity road, Ada Co. CD 3/21.

▲ **IDAHO**—State Hy. Dpt., Boise, Bids opened 9/30,
Earl L. McNutt Co., 351½ E. Broadway, Eugene, Ore., LB $1,219,449, constr. roadway, 34 ft. concrete bridge, bit. surf. 5.513 mi. U. S. 95, cover coat material in stockpile, Idaho Co. CD 9/9.

UTAH—State Rd. Comn., State Capitol, Salt Lake City, Bids opened 9/30,
Utah—W. W. Clyde Constr., Box 231, Springville, Utah, LB $275,628, 2½ in. road mix bit. surf. 4.491 mi. U. S. 89, Fed. Aid Proj. No. FIH-2, Kane Co.;
Utah—Maurice Rasmussen, D. H. Brimhall & The Johnson Co., Murray, Utah, LB $239,047, 2½ in. road mix bit. surf. 10.605 mi. State Road 21, Fed. Aid Sec. Proj. S-0352, Millard Co. CD 9/22.

ARIZONA—State Hy. Dpt., 206 S. 17 Ave., Phoenix, Bids opened 9/12,
Ariz.—Heiskell Constr. Co., 1960 Grand Ave., Phoenix, Ariz., LB $120,808 (10 bidders) grading, draining, select mat. bit. road mix, emulsified asph. seal coat 5.3 mi. Case Grande-Maricopa Hy., Pinal Co.;
Ariz.—San Xavier Rock & Sand Co., 600 W. 25, Tucson, Ariz., LB $191,741 (10 bidders) select mat. aggreg. base, bit. plant mix, plant mix seal coat, one 3-span

(Continued on page 151)

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(Continued from page 148)

steel girder overpass Picacho Florence Jct. Hy. (Picacho Overpass) Pinal Co., CD 7/31/57.

† **J. F. Noonan Co.**, 920 Keele Dr., Reno, Nev. LB $97,500 (6 bidders) replace heating sys. in Babbitt L.C.H. Proj. (1st increment) at Naval Ammunition Depot, NBy 20832, HAWTHORNE, NEV. Dist. P. Wks. Office, 12th Naval Dist., Room C 112, San Bruno, Calif. Bids Oct. 1. CD 9/19.

R. C. Hughes, N. 2105 Airport, Spokane, Wash., LB $137,618, (6 bidders), 33-kilovolt transmission line from Ellensburg 9 mi. west, Kittitas Co., WASHINGTON, Kittitas Co. Public Utilities Dist., Ellensburg, Wash.

▲† **Purvis Constr. Co.**, E. 5019 Sprague St., Spokane, Wash., LB $2,924,713 (7 bidders), 1000 units single and duplex Wherry housing remodeling and alterations, Fairchild Air Force Base, Inv. 613-59-29, SPOKANE, WASH. Procurement Officer, Fairchild Air Force Base, Spokane, Wash. Bids Oct. 1. CD 9/18.

▲ **CALIFORNIA**—State Div. Hys., 1120 N. St., Sacramento, Bids opened 10/1,

Calif.—**Granite Constr. Co.**, P. O. Box 900, Watsonville, Calif. LB $125,327 (2 bidders) constr. 2 truck weighing stations with necessary acceleration and deceleration lanes, storage and inspection areas, US 40-99E (Roseville Freeway) 0.6 mi. south of Antelope Rd. III-Sac-3-B. Sacramento Co. LB $452,094 (3 bidders) reconstr. 2.1 mi. roadway and constr. drainage facilities at 10 locations U. S. 101 between 0.3 mi. north of Lanes Flat and 0.9 mi. south of Sylvandale. I-Men-Hum-I, J, K; A, B. Mendocino and Humboldt Counties;

Calif.—**Max Hayden, Receiver, Estate of Stewart & Nuss, Inc.**, 410 Thorne Ave., Fresno, Calif. LB $354,538 (8 bidders) grade, surf. 2.3 mi. FAS Co. Rd. 561 (Shaw Ave.) between Van Ness Blvd. and Blackstone Ave. north of Fresno to provide 4 lanes divided hy. on this section VI-Fre-561, Fresno Co.;

Calif.—**Thomas Constr. Co.**, 4665 East Hedges Ave., Fresno, Calif. LB $75,255 (4 bidders) surf. section previously graced 2 lane hy. FAS Co. Rd. 767 (Auburn-Foresthill Rd.) starting at north fork of American River and extend. NE 1.7 mi. III-Pla-767, Placer Co.;

Calif.—**Brighton Sand & Gravel Co.**, P. O. Box 1, Sacramento, Calif. LB $136,593 (7 bidders) grade, surf. 2.2 mi. FAS Co. Rd. 932 (Citrus Rd.) east of Sacramento, III-Sac-932, Sacramento Co.;

Calif.—**A. Teichert & Son, Inc.**, 1931 Stockton Blvd., Sacramento, Calif. LB $154,368 (7 bidders) grade, surf. 4 mi. FAS Co. Rd. 906 (Durham Ferry Rd.) between State Sign Rte. 120 and Roth Rd. about 5 mi. south of Stockton. X-S, J., 906, San Joaquin Co.;

Calif.—**Rose & Matoza Constr. Co.**, 20830 Ruttiege Rd., Castro Valley, Calif. LB $163,651 (6 bidders) grade, surf. 0.7 mi. FAS Co. Rd. 995 (Saratoga Ave.) between Stevens Creek Rd. and 0.1 mi. south of Moorpark Ave. SW of San Jose to convert this section tc 4 lane divided expressway, IV-SCL-995. Santa Clara Co. CD 9/8.

▲ **CALIFORNIA**—State Div. Hys., 120 S. Spring St., Los Angeles, Bids opened 10/2,

J. A. Thompson & Son, 8330 Hindry Ave., Los Angeles, Calif. LB $4,455,804 (7 bidders) grade, pave and structures 2.3 mi. San Diego Freeway in Los Angeles and Culver City from Venice Blvd. to Jefferson Blvd., Los Angeles Co. CD 8/28.

CALIFORNIA—State Div. Hys., 120 S. Spring St., Los Angeles, Bids opened 10/2,

Silberger Constr. Co., P. O. Box 6, Riverside, Calif. LB $243,552. (6 bidders) grade, surf. to widen 7.6 mi. FAS Co. Rd. 735 (28th Ave. and Lovekin Blvd.) between State Rte. 146 and 18th Ave. about 2 mi. south of Blythe. XI-Riv-735, Riverside Co. Bids Oct. 2. CD 9/8.

▲ **CALIFORNIA**—State Div. Hys., 1120 N St., Sacramento,

R. E. Hazard Contg. Co. &. W. F. Maxwell Co., 7501 Friards Rd., San Diego, Calif., CA $1,213,980 1.3 mi. 8 lane freeway US Hy. 80 between 0.2 mi. west and 1.2 mi. east of Taylor St. in San Diego's Mission Valley, incl. 164 ft. bridge over freeway at Presidio Park, San Diego Co. Bids Sept. 11, awarded Sept. 30. CD 9/16, under LB.

CALIFORNIA—Dpt. P. Wks., 1120 N. St., Sacramento, rejected bids Sept. 24, grading 1.5 mi. 2 lane roadway and constr. drainage facilities on Aukum Rd. between Somerset and 0.7 mi. north of North Fork of Cosumnes River, El Dorado Co. Will re-advertise. CD 10/1, under LB.

† **Union Constr. Co., Inc.**, P. O. Box 1506, Missoula, Mont. CA $906,915, clearing Trinity Reservoir site, Stuart Fork area and downstream to Trinity Dam, Lewiston, Trinity Co., Central Valley Proj., Spec. 200C-392, CALIFORNIA. Bureau Reclamation, Dpt. Interior, Fulton and Marconi Aves., Sacramento, Calif. Bids Aug. 19, awarded Oct. 2. CD 8/26, under LB.

McGuire & Hester, 796 66 Ave., Oakland, Calif., LB $357,357, est. $302,230, (4 bidders), Vaughn Canal unit of Solano County Irrigation Dist. water distr. sys., consisting of 6 mi. main canal, lateral canals and drainage canal, CALIFORNIA. Solano Co. Irrigation Dist., Fairfield, Calif. Bids Sept. 30. CD 9/15.

Eugene Luhr & Co., R. R. I, Columbia, Ill., CA $90,070 bank protection and levee constr. right bank, Sacramento River, Howell's Landing, in Colusa Co., Contr. No. DA-04-167, CIVENG-59-43 (IFB-04-167-59-27) CALIFORNIA. U. S. Eng., 1209 8th St., Sacramento, Calif.

† **Granite Constr. Co.**, P. O. Box 900, Watsonville, Calif. LB $578,000 (2 bidders) emergency flood control work (riprap surf. culvert modification install impervious care, appurtenant work) Pajaro River, Santa Cruz and Monterey Counties, ENG-59-45, CALIFORNIA. U. S. Eng., 180 New Montgomery St., San Francisco, Calif. Bids about Sept. 25. CD 9/11.

† **L. A. & R. S. Crow**, 5201 San Fernando Rd., Los Angeles, Calif. LB $833,645, est. $938,124 (9 bidders) levee constr. right bank Sacramento River, Sidds Landing to Ord Bend, Mile 177.5 to Mile 184.7, Glenn Co., ENG-04-167-59-4, Spec. 2457, CALIFORNIA. U. S. Eng., 1209 8th St., Sacramento, Calif. Bids Oct. 2. CD 9/22.

City, 450 N. Crescent Heights Dr., Beverly Hills, Calif., rejected bids Oct. 14, water sys. addn. at Trousdale Estates, BEVERLY HILLS, CALIF. LB $100,985. CD 10,3, under LB.

† **Cleverdon Co., Inc.**, 3603 Happy Valley Rd., Lafayette, Calif. LB $136,789 (4 bidders), offsite utility constr. for Capehart Housing, (access roads, sewage station, force main and underground utilities, etc.) IFB-59-58, HAMILTON AIR FORCE BASE, CALIF. Base Procurement Office, Bldg. 1000, P.O. Drawer 5, Hamilton Air Force Base, Calif.

A. B. C. Constr. Co., 12420 S. Bloomfield Ave., P.O. Box 515, Norwalk, Calif. LB $136,633, private storm drains in Rancho San Pedro Industrial area, LONG BEACH, CALIF. Quinton Engrs. Ltd., 812 W. 8th St., Los Angeles, Calif. Bids Sept. 29.

▲ **Guy F. Atkinson Co.**, Box 259, Long Beach, Calif., LB $4,041,117 (8 bidders), Long Beach Marina, Contr. No. 3, LONG BEACH, CALIF. City, City Hall, Long Beach, Calif. Bids Oct. 1. CD 9/18.

J. A. Thompson & Son, 8330 Hindry Ave., P.O. Box 518, Inglewood, Calif. LB $289,700, est. $333,370 (11 bidders), vehicular pedestrian passageways under Grand Ave. South, off 1st St., LOS ANGELES, CALIF. Los Angeles Co., Hall of Records, Los Angeles, Calif. Bids Oct. 1. 9/17.

Alameda County Plumbing Co., 15773 E. 14th St., San Leandro, Calif. LB $682,000 (4 bidders), install copper waterline at Washington Manor Park, SAN LEANDRO, CALIF. City, City Hall, San Leandro, Calif.

BUILDINGS—LB & CA

Hub Pacific Bldg. Co., 3637 Haven Ave., Redwood City, Calif., LB $427,300, (13 bidders), general contract 2 story, 35,000 sq. ft. OFFICE BLDG. for newly established east area branch of Agnews State Hospital, Dpt. Mental Hygiene, AGNEW, CALIF. State Div. Architecture, 1120 N. St., Sacramento, Calif. Bids Sept. 30. CD 9/8.

Niels T. Larsen, Inc., 1881 Rollins Rd., Burlingame, Calif. CA $200,000. 1 story, 11,000 sq. ft. steel, concrete DATA PROCESSING CENTER, BURLINGAME, CALIF. American Can Co., Eng. Dpt., 111 Sutter St., San Francisco, Calif. Bids Sept. 25. CD 9/18.

▲ **Campbell & Erickson Co.**, 800 R St., Sacramento, Calif., LB $1,276,977 (6 bidders), 1 story, 80,200 sq. ft. wood frame, steel frame, Campos Verdes Junior HIGH SCHOOL, North Highlands, DEL PASO HEIGHTS, CALIF. Grant Union High School Dist., Grand Ave., Del Paso Heights, Calif. Bids Oct. 1. CD 8/25.

▲ **Noyes Roach Co.**, 5017 Telegraph Rd., Los Angeles, Calif. LB $2,161,300 (5 bidders), constr. Bolsa Grande HIGH SCHOOL, 11 tilt-up concrete bridges. LB $694,700 (5 bidders), constr. Rancho Alamitos HIGH SCHOOL addn., GARDEN GROVE, CALIF. Garden Grove Union High School Dist. of Orange Co., County Courthouse, Santa Ana, Calif. Bids Sept. 30. CD 9/18.

Park Flores Realty Co., 8721 Sunset Blvd., Los Angeles, Calif. Owner Builds. $450,000. constr. 3 story, 46,000 sq. ft. APARTMENT, 1200 N. Flores Ave., HOLLYWOOD, CALIF.

R. A. Watt, 7862 S. Western Ave., Los Angeles, Calif. CA $615,100, sixty-five, 1193-1205 sq. ft. frame, stucco DWELLINGS, LOMITA, CALIF. Gibraltar Sales Co., 7862 S. Western Ave., Los Angeles, Calif.

Grandview Bldg. Co., 470 S. Beverly Dr., Beverly Hills, Calif. CA $771,900, forty-two, 1389-1646 sq. ft. frame, stucco DWELLINGS, LOMITA, CALIF. "Palos Verdes Tr. 21350 Partnership" 246 S. Robertson Blvd., Beverly Hills, Calif.

▲ **Beckner Constr. Co.**, 2650 River Ave., South San Gabriel, Calif., LB $2,667,000 (8 bidders), constr. Patrick Henry Junior High SCHOOL, Granada Hills, LOS ANGELES, CALIF. Bd. Educ., 1425 S. San Pedro St., Los Angeles, Calif. Bids Oct. 3. CD 9/11.

▲ **Everett Brunzell Constr. Co.**, 3945 Higuera St., Culver City, Calif. CA $2,248,920, constr. Richard E. Byrd JUNIOR HIGH SCHOOL, Sun Valley, LOS ANGELES, CALIF. Bd. Educ., 1425 S. San Pedro St., Los Angeles, Calif. Bids Sept. 18. CD 9/23, under LB.

▲ **Myers Bros.**, 3407 San Fernando Rd., Los Angeles, Calif. CA $2,525,281, INSTRUCTION BUILDING and RESEARCH LABORATORY for University of Southern California School of Medicine, LOS ANGELES, CALIF. University of Southern California, 3551 University Ave., Los Angeles, Calif. Bids Sept. 11. CD 8/15.

Jackson Bros., 3475 W. 8th St., Los Angeles, Calif., CA $700,000, STORES, N. Mountain Ave., ONTARIO, CALIF. Danelco Corp., 705 W. Foothill Blvd., Azusa, Calif.

Lamon Constr. Co., 881 Market St., Yuba City, Calif., LB $409,527, 1 story, 13,500 sq. ft., masonry, structural steel frame, 30-bed Plumas County NURSING HOME, with alternates, QUINCY, CALIF. Bd. Supervs. Plumas County Nursing Home, Quincy, Calif. Bids Sept. 30, CD 9/15.

▲ **Ekelin & Small Co.**, P.O. Box 8, Salinas, Calif. LB $2,208,830 (9 bidders), 18,000 sq. ft. Type I and Type III constr. HIGH SCHOOL, incl. gym, 5 shops, swimming pool, North Salinas, SALINAS, CALIF. Salinas Union High School Dist., c/o Supt., 431 W. Alisal St., Salinas, Calif. Bids Sept. 30. CD 8/20.

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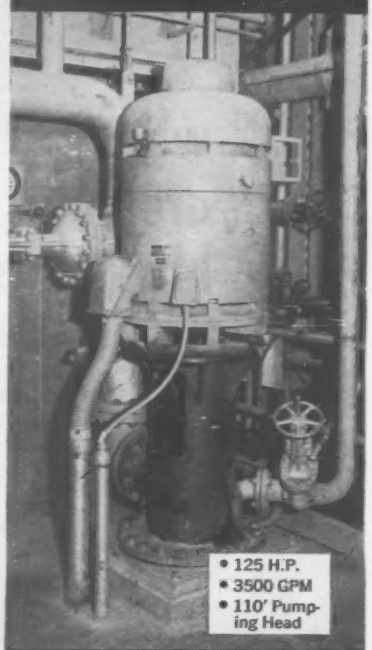

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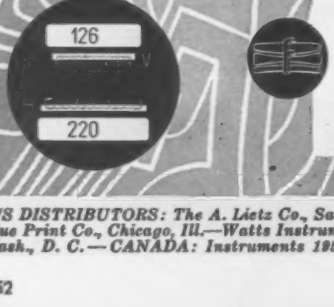

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Wm. H. McDevitt Co., 1934 4th St., San Rafael, Calif. CA $750,000. MARKET BLDG. "Miracle Mile" SAN ANSELMO, CALIF. United Markets, c/o Jacob Van der Ploeg, archt., 2378 39th Ave., San Francisco, Calif., archt.

Nielsen & Nielsen Co., 1071 Westwood Dr., San Jose, Calif. LB $422,265 (7 bidders), VOCATIONAL ARTS BLDG., SCIENCE BLDG, ADMIN. and LIBRARY addns. at City College, SAN JOSE, CALIF. San Jose Unif. School Dist., c/o Supt., 408 Almeden Ave., San Jose, Calif. Higgins & Root, 220 Meridian Rd., San Jose, Calif., archts. CD 2/25.

Meco Constr. Co., 6715 Melrose Ave., Los Angeles, Calif. Owner Builds. $515,600, 57 frame, stucco DWELLINGS, Moneverde, Isabelita and Hildita Sts., UPLAND, CALIF.

CANADA

HEAVY CONSTRUCTION—BA

Alta., Namao—AIRPORT IMPROVEMENTS—BA 10/21—Dpt. Transport, Hunter Bldg., Ottawa, Ont., resurf. Runway 02-20, strengthening and widening Runway 11-29 to 200 ft. and extending it to 14,000 ft. with taxiways aprons, lighting facilities and related work at airport. Over $500,000. Plans deposit $100.

Man., Fort Churchill—AIR BASE IMPRVS.—BA 10/28—Defence Construction (1951) Ltd., 56 Lyon St., Ottawa, Ont., 6 bldgs., Air Force Refueling Base. Over $75,000. Plans deposit $100. CD 10/22.

▲ **Man., Winnipeg**—BA 11/3—Greater Winnipeg Water & Sanitary Dist., 455 Ellice St., supply, delivery, installation 5 ft. & le. second branch aqueduct approx. 12 mi. long; Alternative A, using prestressed embedded cylinder concrete pressured pipe and Alternative B, using steel water pipe cement mortar lined, coal tar and felt wrapped, $7,000,000. CD 8/6.

BUILDINGS—BA

Ont., Georgetown—SCHOOL—BA 10/20—North Halton High School Dist. Bd., Col. G. O. Brown, secy., constr. high school addn., $415,000. Plans deposit $25. Barnett & Reider, 96 Eglinton Ave., Toronto, archts. CD 7/30/51.

▲ **Que., Montreal**—WAREHOUSE, etc.—BA 10/21—Cie du Marche Central Metropolitan Ltee., 424-A Place Jacques Cartier (selected list of bidders) 2 story, bsmnt., 50 x 300 ft. office bldg. and 1 story, 200 x 600 ft. brick, rein.-con. frame warehouse, concrete fdn., Metropolitan Blvd. and de l' Acadie Blvd. $1,250,000. Jean B. Chicoine, 4559 DeLorimer Ave., and Guy St. Aubin Mongenais, 6555 Cote des Neiges Rd., archts. Jean Pierre Bastien, 5370 13 Ave., Rosemont, engr.

Ont., Timmins—FEDERAL—BA 11/12—Dpt. P. Wks., Hunter Bldg., Ottawa, federal bldg. for Canadian Govt. offices. $400,000. CD 4/21.

BUILDINGS—SLC

Que., Montreal—PLANT, etc.—Montwest Ltd., c/o Hugh Blachard, archt., 4444 Sherbrooke St. W., soon lets contract, 90x240 ft., structural steel frame, brick and block plant, warehouse and office bldg., Upper Lachine Rd. $200,000. Wood, McAdam & Magor, 4444 Sherbrooke St. W., engrs.

HEAVY CONSTRUCTION—LB & CA

ONTARIO—Dpt. Hys., Parliament Bldgs., Toronto,
K. J. Beamish Constr. Co. Ltd., Box 189, Thornhill, Ont., LB $393,272 (9 bidders) grading, granular base and hot mix paving 7 mi. Queen Elizabeth Way (58-230), Toronto. CD 10/2/57.

▲ **ONTARIO**—Dpt. Hys., Parliament Bldgs., Toronto,
Ont.—**H. J. McFarland Constr. Co. Ltd.**, Talbot St., Picton, Ont., CA $766,328, grading, culverts, granular base 9.98 mi. Imprvt. District Rd., Contr. 58-54, Sault St. Marie;
Ont.—**Hi-Way Constr. Co. Ltd.**, P. O. Box 187 Simcoe, Ont., CA $862,976 (16 bidders) grading, culverts, granular Base 5.17 mi. and 5 bridges Hy. 401 (58-211) Vernonville Co. Bids Sept. 24, awarded Sept. 29. CD 10/1, under LB.

Sarnia Bridge Co. Ltd., 350 Front St. E., Toronto, Ont. CA Est. $250,000 (9 bidders) supply fabrication, erection structural steel and wood members for grandstand bleacher section, Queen Elizabeth Bldg., TORONTO, ONT. Canadian National Exhibition, Exhibition Park, Toronto, Ont. CD 10/31/56.

Bennett-Pratt Ltd., 5 Maple Leaf Dr., Weston, Ont., CA $617,253 (19 bidders) 1 and 2 story, bsmnt., T-shaped 68 x 241 ft. and 48 x 120 ft. structural steel and load-bearing masonry, brick walls recreational bldg., concrete pile fdns. Trinity Park, TORONTO, ONT. City of Toronto, City Hall, Toronto, Ont. CD 9/22, under LB.

▲ **Foundation Co. of Ontario Ltd.**, 1220 Bay St., Toronto, Ont., CA Est. $1,400,000 (6 bidders) 150 x 320 ft. rein.-con. Woodbine Race Track grandstand addn. concrete pile fdns. TORONTO, ONT. Ontario Jockey Club Ltd., Box 160, Downsview, Ont. Bids Sept. 25, awarded Sept. 24. CD 9/12.

J. E. St. Onge Construction Ltd., 2017 St. Antoine St. Shawinigan, Que., CA $100,000, bridge, Pont Marchand, Rang 7, St. Boniface, QUEBEC. Provincial Dpt. P. Wks., Parliament Bldgs., Quebec City, Que. Awarded Sept. 17.

Bird Constr. Co. Ltd., 24 Dominion Bank Bldg., Moose Jaw, Sask. LB $85,047, UHF transmitter and receiver bldg., Royal Canadian Air Force Station, MOOSE JAW, SASK. Defence Construction (1951) Ltd., 56 Lyon St., Ottawa, Ont.

BUILDINGS—LB & CA

▲ **Dominion Constr. Co., Ltd.**, 838 11 Ave. S. W. Edmonton, Alta., CA $1,000,000, 70 room HOTEL,

(Continued on page 154)

K&M
ASBESTOS-CEMENT SEWER PIPE
SIMPLIFIES PLANNING, INSTALLATION, AND MAINTENANCE

You have a crushing strength to match every laying condition . . . because there are 5 new engineering classifications of K&M Asbestos-Cement Sewer Pipe. A Manning Factor of n = 0.010 permits fewer lift stations, flatter grades, higher-level filtration plants, and smaller pipe diameters. Tight joints eliminate infiltration.

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when and where needed!

Aim the Clayton SUMMERAIRE at the area to be heated or dried out and chase winter delays with summertime temperatures. Series "300" SUMMERAIRE heaters deliver up to 2700 cu. ft. heated air per minute, with a temperature rise of 170°F., burning less than 2.5 gals. low cost fuel per hr. Choice of electric or gasoline drive, with or without automatic temperature control for confined areas. Enclosed combustion chamber insures safe, odorless operation. Write for FREE catalog and demonstration by nearest dealer.

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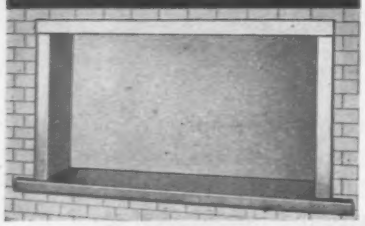


DINING ROOM SIDE

This unit consists of an integral hollow metal door and frame designed for quick, economical installation in schools, cafeterias, restaurants, ticket and baggage rooms, cloak rooms, gymnasium issue rooms, etc. Also with glass frame for hospital observation rooms and laboratories. Special extended sills furnished when specified.

See Sweet's Arch. File 34c/Pe, page 9.

THE PEELLE COMPANY
47 Stewart Ave., Brooklyn 37, N. Y.
ALSO RICHMOND FIREPROOF DOOR CO.
Richmond, Ind.

(Continued from page 152)

EDMONTON, ALTA. Arden Holdings Ltd., Kingsway and 108 St., Edmonton, Alta. Dominion Constr. Co., Ltd., 838 11 Ave. S. W. Edmonton, Alta., engrs. Awarded April 25.

Acadia Construction Co., Ltd., 14 Dufferin St., Bridgewater, N. S. LB $438,000 (10 bidders) TERMINAL and GENERATOR BLDG. at Naval Base, SHELBURNE, N. S. Defence Construction (1951) Ltd., 54 Lyon St., Ottawa, Ont.

Anglin-Norcross Corp. Ltd., 892 Sherbrooke St. W., Montreal, Que., CA Est. $700,000 (5 bidders) 180 x 600 ft. corrugated iron walls, wooden plant roof deck LUMBER STORAGE BLDG., BRAESIDE, ONT. Gillies Bros., Braeside, Ont. H. E. Bovay, Jr., 5009 Caroline St., Houston, Tex., U. S. A. engr. Awarded Sept. 26. CD 11/26/45.

Louis Donolo (Ontario) Ltd., 2790 Dufferin St., Toronto, Ont., CA $750,000 (18 bidders) 62 bed HOSPITAL, MILTON, ONT. Milton & District Hospital Bd. Governors, Milton, Ont. Bids Aug. 21, awarded Sept. 25. CD 7/31.

Samuel Roy Enterprises Ltd., 467-A Spadina Rd., Toronto, Ont. Owner Builds $397,200, 5½ story, 44 suite APARTMENT, east side of Birchmount Rd., TORONTO, ONT. E. E. Richmond, 455 Spadina Rd., Toronto, Ont., archt.

Speckert-Morris Ltd., Hy. 7, Markham, Ont., LB $935,-400 2 story, bsmnt., 60 x 270 ft. and 50 x 70 ft. L-shaped brick and block Duke of Cannaught SCHOOL, TORONTO, ONT. Toronto Bd. Educ., 155 College St., Toronto, Ont. Bids Sept. 26. CD 9/15.

Pentagon Constr. Co., Ltd., 5005 Namur St., Montreal, Que., CA $200,000 (4 bidders) second story 43,300 sq. ft. concrete column structure, brick walls tile backing PLANT addn., concrete roof slab, drop panels, MAGOG, QUE., Dominion Textile Co., Ltd., 1950 Sherbrooke St. W., Montreal, Que., Bids Sept. 5, awarded Sept. 25. CD 8/29.

▲ **Anglin-Norcross Quebec Ltd.**, 892 Sherbrooke St. W., Montreal, Que., CA Est. $26,500,000, 5 story, 2 bsmnts. SHOPPING CENTER, Cote des Neiges, Barclay, Legare and MacKenzie Aves., MONTREAL, QUE. Amsterdam Development Corp., c/o Dunford, Bolton, Chadwick & Ellwood, archts., 4101 Sherbrooke St. W., Montreal, Que. Awarded Sept. 27. CD 6/4, under LB.

Alta Construction Cie., Ltee., 700 Blvd., Ste. Croix, St. Laurent, Montreal, Que. CA $450,000 (5 bidders) 1 story, 45 x 125 ft. addn. and 45 x 70 ft. extension to EDUCATIONAL SOCIAL CENTER, MONTREAL, QUE. Centre Recreatif & Social Notre Dame du Phare, Centre Maria-Coretti, Cote St. Catherine Rd. and Decelles Ave., Montreal, Que. Edgar Courchesne, 3057 Lawrence Blvd., Montreal, Que., archt. Pageau & Morel, 8527 St. Lawrence Blvd., Montreal, Que., engrs. Awarded Sept. 15.

O. K. Economy Stores Ltd., 1st Ave. and Duke St., Saskatoon, Sask. Owner Builds $400,000, SHOPPING CENTER, Rosemount Dist., REGINA, SASK. CD 10/2.

FOREIGN

HEAVY CONSTRUCTION—BA

Egypt, Cairo—TRANSMISSION LINES—BA 10/27—Embassy of United Republic, 2310 Decatur Place N. W., Wash., D. C., U. S. A. overhead transmission lines, switch stations and switch station extensions for third extension of Delta Electricity, Extended date, Plans deposit $28.79. CD 9/4.

PROPOSED PROJECTS

WATER SUPPLY

▲ **Calif., Vacaville**—City, City Hall, bond election Nov. 4, water sys. imprvs. $2,450,000.

Ill., Mount Prospect—Manor Service Co., 7830 W. Lawrence Ave., Chicago, water and sewage disposal sys., in 115 acre tract, Brickman Manor. $431,000. Chas. W. Greengard, 730 Waukegan Rd., Deerfield, consult. engr.

Ind., Gary—Gary-Hobart Water Corp., 650 Madison St., constr. water distr. sys., 37,290 lin. ft. mains, Black Oak area, $164,000.

Kan., Hoisington—City, City Hall, Proj. Kan. 14-P-3010, water facilities. $912,000. Wilson & Co., P.O. Box 28 and 631 E. Crawford, Salina, archts.-consult. engrs.

La., Bogalusa—City, City Hall, Proj. La. 16-P-3042, water facilities. $397,000. Burk, LeBreton & Lamantia, 632 Pirates Alley, New Orleans, consult. engrs.

O., Worthington—City, City Hall, water sys. imprvs. $122,000. Jennings-Lawrence Co., 1392 King St., Columbus, consult. engrs., replacing Bird & Tietzel, 2130 Arlington St., Columbus, former consulting engrs. CD 8/11/55.

Tex., Benjamin—Walter S. Davis Jr., League City water reservoir, 5 mi. from here. $150,000.

Tex., Big Lake—City, WW $850,000.

Tex., Bryan—City, City Hall, concrete and earth dam, 45 ft. high, on Wixon Creek (Domestic Water Supply) $622,900; water distr. lines, $100,000; water line, Dam to City, $250,000. Spencer J. Buchanan & Assocs., Bryan, consult. engrs. CD 4/4/56.

Tex., Donna—City, WW $125,000. Constr. 1959.

Tex., Eagle Pass—City, City Hall, WW. $100,000. Constr. 1959.

Tex., Granbury—City, water lines. $140,000. water storage $50,000. Constr. 1959.

Tex., Marble Falls—City, WW. $150,000. Constr. 1959.

Tex., Monahans—City, City Hall, wells, water field, $175,000; water filtration plant, $100,000; 20 in. water line, Field to City, $250,000, Koch & Fowler, 3900 Lemmon Ave., Dallas, consult. engrs. CD 8/28/56.

Tex., Temple—City, water pollution control proj. $235,620.

Ont., Port Credit—Pub. Utilities Comn., Toronto Twp., 23 Applewood Village, Port Credit, purification plant extens., Dundas St. $105,000.

SEWERS, WASTE DISPOSAL

Ala., Brewton—City, City Hall, sewage disposal sys., $280,000, J. B. Converse, 1st Federal Savings Bldg., Mobile, consult. engr.

Ark., Kensett—City, City Hall, (PFL-V-3-107) sewer facility. $160,000. Irby Seay, 514 Gowdyn Inst. Bldg., Memphis, Tenn., consult. engr.

Ga., Savannah—City, City Hall, sanitary sewers, Pine Gardens area, $100,000. Dan E. Sewell & Assocs. 10 Drayton St., consult. engrs. CD 9/23.

Calif., Vacaville—City, City Hall, bond election Nov. 4, sewage treatment facilities, $990,000.

Fla., Live Oak—City, City Hall, sewage treatment plant, 2 lift stations, lines. $900,000 Smith & Gillespie, P. O. Box 1048, Jacksonville, consult. engrs. CD 7/26/46.

Fla., Miami—Bd. Comrs. Dade Co., Courthouse, sanitary sewers for Key Biscayne Island. $100,000. Maurice H. Connell & Assocs., 315 N. W. 27 Ave., consult. engrs.

▲ **Ga., Athens**—City, City Hall, 2 sewage treatment plants, force mains, pumping stations, etc., $4,088,-000. Wiedeman & Singleton, P. O. Box 1878, Atlanta, consult. engrs.

Idaho, Grace—Village, Village Hall, $170,000 bond election Nov. 18, sewerage sys., treatment plant. CD 7/2/47.

▲ **Ind., Indianapolis**—Bd. Sanitary Comrs., 421 N. Pennsylvania St., South Side Interceptor Sewer, Pleasant Run between White River and Keystone, $1,497,-500, Hannan, Meek & Cordill, 3733 N. Illinois St., consult. engrs.

Kan., Augusta—City, City Hall, Proj. Kan. 14-P-3011, sewer facilities. $425,000. Ediger & Co., P. O. Box 145, Wichita, consult. engrs.

Ky., Flemingsburg—City, sewage treatment plant, primary type plant, trickling filters, etc. force mains, 3 pumping stations. $400,000. Howard K. Bell, 553 S. Limestone St., Lexington, consult. engr. CD 7/29.

▲ **Ky., Okolona**—City, City Hall, collection sys. and treatment plant. $1,350,000. Leo W. Peleskee, 234 Citizens Bldg., Louisville, Zone 2, consult. engr.

La., Bogalusa—City, City Hall, Proj. La. 16-P-3044, constr. incinerator. $230,000. Burk, LeBreton & Lamantia, 632 Pirates Alley, New Orleans, consult. engrs.

Mass., Wellesley—Town, Bd. P. Wks., 324 Washington St., incinerator. $400,000. Charles T. Main, Inc., 80 Federal St., Boston, engr. Constr. 1959.

Minn., Big Lake—Village, Village Hall, sanitary sewers and sewage treatment plant. $200,000. R. J. Ellison, 2066 Bayard Ave., St. Paul, consult. engr. Constr. 1959.

Mo., Neosho—City, City Hall, sanitary sewerage sys. imprvs. in Sewer Dists. 7, 8 and 9. $120,000. Harry Hatcher, Neosho, engr. CD 9/2.

▲ **N. J., Little Silver**—Borough of Little Silver, Borough Hall, sewerage sys. $1,215,000, Lanning Sanitary Eng. Co., 1100 S. Broad St., Trenton, consult. engr. CD 4/4.

N. C., Madison—Town, Town Hall, sewage disposal plant and lines. $400,000. Wm. F. Freeman, Inc., 116 E. Commerce St., High Point, consult. engr. Bids about July 1959.

N. C., Spencer—Town, Town Hall, sewage treatment plant, $350,000. W. K. Dickson, Inc., 404½ S. Tryon St., Charlotte, consult. engr. Bids in November.

N. C., Waynesville—Town, Town Hall, sewage treatment plant, $300,000. W. K. Dickson, Inc., 404½ S. Tryon St., Charlotte, consult. engr.

▲ **O., Girard**—City, City Hall, sewage disposal plant. $1,500,000. Floyd G. Browne, 125 W. Church St., Marion, consult. engr.

O., Sabina—Village, Village Hall, defeated $200,000 bonds Sept. 23, sewerage sys. and treatment plant. $667,000. CD 6/20.

Tex., Crowley—City, City Hall, sewer facilities (Tex. 41-P-3054). $115,000. Joe J. Rady, 511 Insurance Bldg. Fort Worth, consult. engr.

Tex., Donna—City, sanitary sewerage sys. work. $125,-000. Constr. 1959.

Tex., Granbury—City, sanitary sewer lines. $100,000. Constr. 1959.

Tex., Groves—City, City Hall, sanitary sewers, $100,000, CD 7/9/54.

Tex., Houston—Bema Constr. Co., Inc., 10433 Market St., sanitary sewers $80,000; storm sewers $75,000, 600 home subdivision north of Jacinto City.

Tex., Houston — North Houston Industries, Inc., 606 Armour St., sanitary sewers $77,000; storm sewers $75,000, for industrial center, 6 mi. north of here.

Tex., Marble Falls—City, sanitary sewers. $125,000. Constr. 1959.

▲ **Tex., Port Arthur**—Metropolitan Sanitary Sewer Dist. of South Jefferson County, Port Arthur, defeated bonds

(Continued on page 157)

The Surveyor's Notebook

Reporting on Unusual Surveying Problems and Their Solutions

Notekeeper: W. & L.E. Gurley, America's Oldest Engineering Instrument Maker

Problem: *Locate—perfectly—6000 bridge anchor bolts*

Solution: *Try a little magnetism—plus "a really fine instrument"*

Scene: High-level approaches to a giant among structures—the Walt Whitman Bridge, joining So. Philadelphia, Pa., and Gloucester City, N.J.

Task: Place 6000 anchor bolts for 1500 shoes—perfectly—by drilling in place after concreting.

Complication: Beams were fanned in almost all spans and relatively few of the shoes were at right angles to bearing lines.

Surveyor: William D. Kirk, Jr., Union Building & Construction Corp., Passaic, N.J.

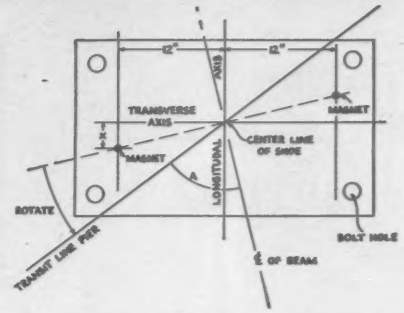
Equipment: Transit, sheet metal templates, two pocket-clip magnets, black paint and "the best crew you could ever want."

Let Bill Kirk tell it...

"The sketch shows a typical sheet metal template with pencil magnets on two lines scribed parallel to the longitudinal axis 12" from the template center. The magnets are set at the correct distance from the transverse axis of the template, for the particular angle (A) this beam makes with the pier. This distance (X) is taken directly from the natural tables. The template with magnets affixed is rotated about the previously located centerline of shoe until the line produced by the magnets is superimposed upon the transit line. Because of the constantly changing angle, the simplicity of sliding the magnets to each new distance soon proved itself.

Walt Whitman Bridge: Length, including approaches: 6.2 mi. Roadway width: 79 ft. Span midpoint: 150 ft. above mean high water. Towers: 378 ft. high.

Bill Kirk depends on a Gurley level. It has given excellent service for years.



This ingenious template solved locating problem.

"The punched bolt holes in the template, the major axes and the corners were then sprayed with black paint; lines were scribed through it onto the concrete at the axes to give permanent alignment for the bolt-setting templates of ¼-inch plywood. With upwards of 144 bolt holes to drill on top of an individual pier it sometimes looked like a polka dot madhouse."

Kirk's idea cut eight weeks off his schedule.

Says Bill Kirk: "Venerable as our Gurley instrument is, we found that it needed only very occasional adjustment in the field, even with the beating it took while traveling in a pickup truck over rough fills. For precision, give me a Gurley—a really fine instrument."

Accuracy is nothing new at Gurley. This background of accuracy goes back to 1845. Our current Research and Development program has brought to the American surveying instrument such improvements as the Optical Plummet Transit and Variable Power Eyepiece.

The Optical Plummet Transit (Model OP-57) has proved to be such an important time-and-money saver that this feature has also been added to the Model 132 Standard Precise Transit. The new model is known as the OP-137. Both OP transits save time and trouble in setting over a point...eliminate sway of cord and plummet...are especially accurate on windy locations. The OP's are furnished with tripods which have built-in shifting heads. *(Ask for Bulletin OP-100)*

Variable Power, now standard on all Gurley transits and levels, permits wide range of magnification with *one* eyepiece...makes possible a change of magnification to suit weather and light conditions. *(Write for "Facts on VP")*

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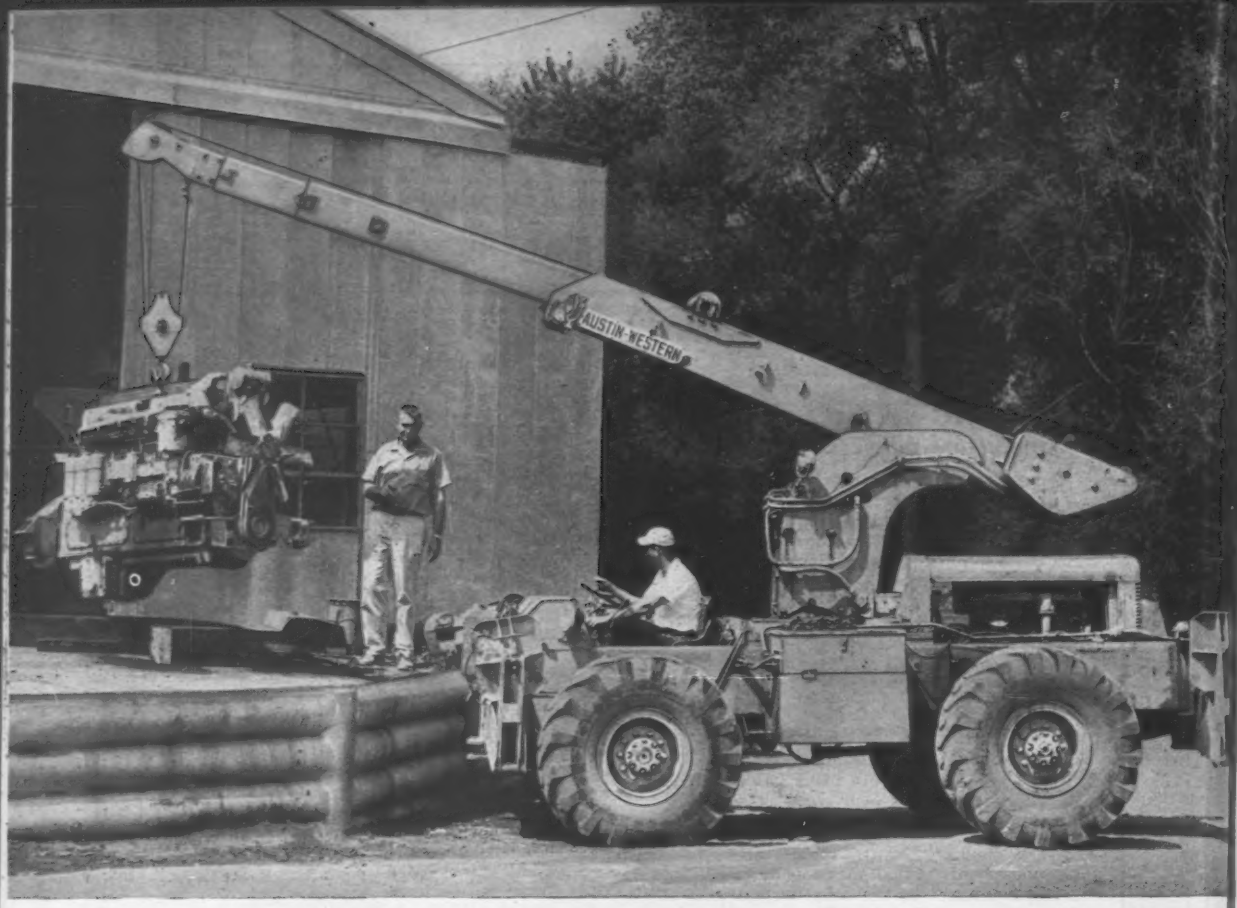

Austin-Western Hydraulic Crane is Ohio contractor's key materials handling unit

C. F. Replogle Co. serves the tri-state area of Ohio, West Virginia and Indiana as engineer and contractor, did close to a $10 million business in 1957. During the 1954 season, the company rented an A-W crane to assist in maintaining its $¾ million worth of equipment at its five central shops, in Circleville, Ohio. The crane soon proved itself invaluable, and Replogle decided to buy it. In addition to doing the heavy lifting on maintenance jobs, the crane serves the yard detail in handling cables, rollers, oil and other material.

The company tells us: "Everything in the maintenance yard and shops revolves around and depends on the use of this A-W crane. The shop foremen hate to see the crane rented out occasionally, as a favor to neighboring plants, because it requires a bit of planning to avoid interruptions of work, even for the small average of 3 hours a week that it can be spared. In summer it works nearly 16 hours per day. In winter it works about 8 hours per day.

"This unit has unlimited flexibility and turns from handling large crane boom sections in the yard to loading spools of wire on trucks, then to lifting an engine out of a machine. The precise hydraulic control saves time and avoids damage to valuable equipment during repairs."

For the complete C. F. Replogle story, write for Certified Gould Report No. 5705.

Austin-Western CONSTRUCTION EQUIPMENT DIVISION, AURORA, ILL.

BALDWIN · LIMA · HAMILTON

Power graders • Motor sweepers • Road rollers • Hydraulic cranes

BALDWIN BLH LIMA-HAMILTON

(Continued from page 154)

Sept. 20, sewage treatment plant, $1,430,000; sanitary sewer lines, $1,250,000; sewage pumping plant, $500,000; serving towns of Port Arthur, Groves, and Lakeview and Griffing Park. CD 9/11.

Tex., Throckmorton—City, City Hall, sewer facilities (Tex. 41-P-3055) $150,000. Wm. O. Leach & Co., Coleman, consult. engrs.

Wash., Pasco—City, City Hall, $650,000 bond election Nov. 4, storm sewer trunk sys. west of Northern Pacific Railway tracks. CD 10/25/56.

▲ **Man., St. Boniface and St. Vital**—St. Boniface & St. Vital, (joint ownership) Man., sewerage sys., $1,000,000.

▲ **Ont., Sault Ste. Marie**—Ontario Water Resources Comn., East Block, Parliament Bldgs., Toronto, Integrated sewerage sys. incl. trunk, outfall and interceptor sewers, a pumping station and treatment plant. $2,581,000.

BRIDGES

Calif., Los Angeles—Los Angeles Co., 501 Hall of Records, imprv. Glendale Blvd.-Brand Blvd. grade separation at Southern Pacific R.R. tracks. $150,000.

Tenn., Columbia—Maury Co., Courthouse, bridge on Lefwich Rd. $100,000.

Tenn., Nashville—City, City Hall, Jefferson Woodland and Shelby St. Bridges. $1,000,000. CD 3/17/48.

▲ **WASHINGTON**—State Hy. Comn., Olympia,
Grant and Kittitas Counties—high-level brdge over Columbia River at Vantage on Primary St. Hy. No. 7, to replace existing bridge. $20,000,000, Work may start late next year. W. A. Bugge, state hy. dir.

Ont., St. Thomas—Elgin County Council, County Hall, triple box culvert, each to have openings 24 ft. high and 20 ft. wide to span Otter Creek, Richmond. $200,000.

STREETS AND ROADS

CONNECTICUT—State Hy. Dpt., 165 Capitol Ave., Hartford,
Thomaston and Waterbury—Route 8, approaches, Fed. Proj. 151-69. $100,000. Bids in 1958.

CONNECTICUT—State Hy. Dpt., 165 Capitol Ave., Hartford,
Niantic—reconstr. Route 161 Flander-Niantic Rd., from Conn. Turnpike to Society Rd., Proj. 44-76 $140,000. Robt. G. Mitchell, c/o owner, engr. Bids in 1958.

Ga., Gainesville—City, City Hall, street imprvs., $100,000.

▲ **La., Bogalusa**—City, City Hall, Proj. La. 16-P-3042, street paving. $1,700,000. Burke, LeBreton & Lamantia, 632 Pirates Alley, New Orleans, consult. engrs.

La., Kinder—City, City Hall, Proj. La. 16-P-3045 street paving. $301,810. Owen & White, 6453 Choctaw Dr., Baton Rouge, consult. engrs.

▲ **MICHIGAN**—State Hy. Dpt., Stevens T. Mason Bldg., Lansing,
Midland and Isabella Counties—25.8 mi. relocation US Rte. 10, incl. 15 bridges. $11,500,000.

▲ **PENNSYLVANIA**—Pa. Hy. & Bridge Auth., 506 North Office Bldg., Harrisburg,
Lackawanna Co.—4 lane divided pavement from near Intersection of L.R. 35020 and Twp. Rd. 423 north to 0.28 mi. north of Twp. Rd. 444, 1.1 mi. Interstate (Proj. 826-1). $1,200,000. Bids November or December.
2.92 mi. 4 lane divided hy. from 0.25 mi. south of L.R. 35021 north to 300 ft. south L.R. 533, Interstate (Proj. 826-2). $2,500,000. Bids November or December.
2.53 mi. 4 lane divided hy. from 300 ft. south of L.R. 533 and 200 ft. east of Twp. Rd. 433 Northward to 0.25 mi. north of Intersection of L.R. 35033 and L.R. 322 at Jordon Hollow, Interstate (Proj. 826-3). $3,000,000. Bids November or December.

Tex., Brenham—City, City Hall, streets, imprv. and paving. $200,000. Montgomery & Williams, 710 W. 5th St., Austin, consult. engrs.

Tex., Garland—City, streets $225,000 Constr. 1959.

Tex., Liberty—City, City Hall, street paving, imprvs. $425,000.

Tex., Prairie View—Prairie View College, street expansion, imprvs., $75,000; sanitary sewers, $75,000. Constr. 1959.

Tex., San Antonio—City, City Hall, asphalt street paving Dauchy Rd., $100,000; asphalt street paving S. Hackberry St., $300,000; asphalt street paving Division Ave. $100,000. Proj. "C" participation street asphalt paving in east and northwest section of city 9.11 mi., $400,000. Donoho & Cross, 1102 Basse Rd., consult. engrs. CD 6/20.

▲ **WASHINGTON**—State Hy Comn., Olympia,
Whatcom Co.—4-lane limited access hy. from Ferndale to Blaine, Primary St. Hy. 1, $4,446,000. Work may begin next year, W. A. Bugge, state hy. dir.

EARTHWORK, WATERWAYS

† **Arizona-Nevada**—Bureau Reclamation, Interior Bldg., 19 and C Sts. N. W., Wash., D. C. 195,000 kw generator N-B Hoover Power Plant, Boulder Canyon Proj. $176,000 appropriated, CD 9/21/44.

† **Arizona**—Bureau Reclamation Dpt. Interior, Denver Federal Center, Denver, Colo., drainage Yuma Mesa and Wellton-Mohawk Valley, pump in Yuma Mesa Pumping Station, repairing canal lining, Gila Project. $372,000 appropriated.

▲ **Ark., Little Rock**—City, City Hall, $1,350,000 bond election Nov. 4, street and drainage constr., traffic signals.

† **California and Nevada**—U. S. Eng., 1209 8th St., Sacramento, Calif. Truckee River and tributaries Truckee River. $150,000 appropriated.

▲† **California**—Bureau Reclamation, Dpt. Interior Denver Federal Center, Denver, Colo., completing Putah South Canal, Solano Proj. $1,666,000 appropriated.

▲† **California**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., completing Twitchell Dam (formerly Vaquero Dam) State Hy. Rte 57, Santa Maria Proj., Cyuana River near Santa Barbara. $1,700,000 appropriated. CD 10/2/52.

▲† **California**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., Trinity Dam and Clear Creek Tunnel, Central Valley Proj. $41,835,000 appropriated.

▲† **California**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo. completing Casitas Dam, relocating State Hy. 150, constr. Robles Diversion Dam, Robles-Casitas Diversion Canal, Conveyance systems for Ventura River, Ojai Valley and Rincon Areas, Ventrua River Proj. $1,141,000 appropriated.

▲† **California**—U. S. Eng., 751 S. Figueroa St., Los Angeles, flood control, San Dieguito River. $1,961,000 (no appropriation).

▲† **California**—U. S. Eng., 1209 8th St., Sacramento, flood control, Oroville Reservoir, Feather River. $50,000,000 (no apropriation).

† **California**—U. S. Eng., 1209 8th St., Sacramento, Middle Creek flood control flows into Clear Lake. $600,000 appropriated.

† **Colorado**—Bureau Reclamation Dpt. Interior Denver Federal Center, Denver complete constr. Big Thompson Powerplant and switchyard, Colorado Big Thompson Proj. $381,855.

† **Colorado**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, rehabilitating Grand Valley Diversion Dam, Grand Valley Proj., Garfield Gravity Div. $140,000.

▲† **Colorado**—Bureau Reclamation Dpt. Interior, Post Office Bldg., Grand Junction, Vega Dam and Reservoir Plateau Creek, near Grand Junction, Southside Canal, Leon Park Feeder Canal, access road to Cottonwood Reservoir, upper and Lower Molina Power plants, $4,970,000 appropriated.

▲† **Colorado**—Bureau Reclamation, Dpt. Interior, Post Office Bldg., Grand Junction, Paonia Dam and Reservoir Muddy Creek, Paonia participating Irrigation project. $1,026,000 appropriated.

Conn., Stafford—Town, Flood Control Comn., Town Hall, Stafford Springs, flood control, detention dams at Pomeroy Brook, Shenipsit State Forest, Bradway Pond, Patten and Ellis Brooks, relocate Central Vermont Railroad. $200,000.

† **D. C., Wash.**—P. Wks. Office, Anacostia, operational facilities, Naval Receiving Station, Anacostia, $650,000.

Fla., Jacksonville—Duval Co. Port & Industrial Auth., 330 E. Bay St., harbor development, incl. dredging and filling, $100,000, Reynolds, Smith & Hills, 227 Park St., consult. engrs.

† **Idaho**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., completing Palisades Project, $341,000 appropriated. CD 9/16/57.

† **Idaho**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., lining and repairing deteriorated sections New York Canal, pumping plant on Payette Div., Boise Project, $301,000 appropriated.

† **Idaho**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., wells and laterals, drainage, Michaud Flats Project. $463,000 appropriated.

† **Idaho**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., wells, laterals, pumping, North Side Pumping Div., Minidoka Proj., $368,000 appropriated.

† **Kansas**—U. S. Eng., 1800 Federal Office Bldg., Kansas City 6, Mo., flood control near Manhattan, Blue River. $300,000 appropriated.

▲† **Kansas**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., Webster Unit, Missouri River Basin, complete 1st and 2nd section Osborne Canal, constr. 3rd section Osborne Canal and laterals pumping plants, pump canals; complete Woodston Diversion Dam. $1,294,045 appropriated.

† **Michigan**—U. S. Eng., 1101 Washington Blvd., Detroit, new Poe lock, St. Mary's River. $350,000 appropriated for planning.

▲† **Michigan**—U. S. Eng., 1101 Washington Blvd., Detroit, dredging Rouge River. $101,500 (no appropriation).

† **Michigan**—U. S. Eng., 1101 Washington Blvd., Detroit, preventing beach erosion, Berrien Co. $226,000 (no appropriation).

▲† **Montana**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo. completing pumping plant Canyon Ferry Dam, 2.8 mi. tunnel, 31 mi. main canal, laterals and drains, Helena Valley Unit, Missouri River Basin. $2,255,000 appropriated.

▲† **Nebraska**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., Ainsworth unit, Missouri River Basin; Merritt Dam and Reservoir access road on Snake River near Valentine $1,139,040 appropriated. CD 5/25/44.

† **Nebraska**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo. Farwell Unit, Missouri River Basin, Sherman Dam and reservoir, road relocations, Oak Creek near Loup City. $794,810 appropriated. CD 5/25/44.

▲† **New Mexico**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., channelization in Albuquerque, Socorro, Belen and Hot Springs areas, Middle Rio Grande Project. $3,628,000 appropriated. CD 9/7/44.

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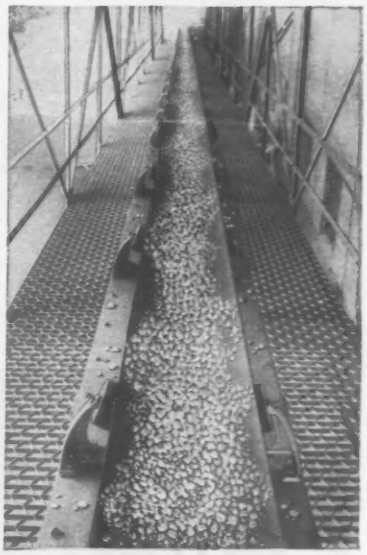

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† **North Carolina**—U. S. Eng., 308 Customhouse, Wilmington, flood control Pantego and Cucklers Creek. $413,000 (no appropriation).

† **North Dakota**—Bureau Reclamation, Interior Bldg. 1-A, Denver Federal Center, Denver, Colo., canals, laterals and drains, Buford Trenton Proj. $112,000 appropriated.

† **North Dakota**—U. S. Eng., Fort Peck, Montana, flood control, Cannonball River at Mott. $434,000 (no appropriation).

† **Ohio**—U. S. Eng., Engineer Park, Buffalo 7, N. Y., navigation, Vermilion Harbor. $474,000 (no appropriation).

Ohio—Ohio Dpt. Natural Resources, State Dpts. Bldg., Columbus, parking lot, boat-launching ramp and public fishing lake, Shreve Lake in Clinton Twp., Wayne Co. $130,000. CD 11/3/44, under O., Columbus.

▲† **Oklahoma**—Bureau Reclamation Dpt. Interior, C between 18 and 19 Sts. N. W., Wash., D. C., completing Fort Cobb Dam and Reservoir, Foss Dam and Reservoir, Washita Basin Proj. $6,500,000 appropriated. CD 3/12/56.

▲† **Oregon**—Bureau Reclamation, Dpt. Interior, Interior Bldg., 19 and C Sts. N.W., Wash. 25, D. C., Howard Prairie Dam and Reservoir, Keene Dam and Reservoir, Green Springs Power Conduit, 16,000 kw Green Springs Power Plant and switchyard, canals; continue constr. Emigrant Dam and Reservoir, Rogue River Basin Proj., Talent Division, $9,583,000. CD 9/9/44.

▲† **Oregon**—Bureau Reclamation, Dpt. Interior, Bldg. 1A, Denver Federal Center, Denver, Colo., earth and rockfill Prineville Dam and Reservoir, incl. Diversion Canal, Crooked River Proj. $2,043,000 appropriated.

† **Oregon**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo. imprv. main canal of Medford Irrigation Dist. and Rogue River Valley Irrigation Distribution, Rogue River Basin Proj., $201,000. CD 9/4/44.

† **Pennsylvania**—U. S. Eng., 24th St. and Maryland Ave., Baltimore, Md. Curwensville Reservoir West Bridge Susquehanna. $175,000 appropriated for planning. CD 10/16/52.

† **South Dakota**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., canal lining and drainage, Angostura Unit, Missouri River Basin. $229,000 appropriated. CD 9/16/57.

▲ **Texas**—North Central Texas Municipal Water Auth., City Hall, Munday, 5 town municipal water supply dam in Knox Co. $4,800,000.

† **Texas**—U. S. Eng., 100 W. Vickery St., Fort Worth, Navarro Mills Reservoir, Richland Creek, Trinity River Basin. $150,000 appropriated.

† **Texas**—U. S. Eng., 100 W. Vickery St., Fort Worth, Lampassas Reservoir Brazos River Basin in Lampassas River near Belton. $125,000 appropriated for planning.

† **Texas**—U. S. Eng., 100 W. Vickery St., Fort Worth, Proctor Reservoir, Leon River, Brazos River Basin $125,000 appropriated for planning.

▲ **Tex., Lufkin**—Southland Paper Mills, Lufkin, 8567 ft. off-channel reservoir, 36 ft. high, south of Angelina River and 8 mi. north of Lufkin, $1,500,000; 1,900 ft. channel between river and reservoir. $500,000.

Tex., Mercedes—Mercedes Water Dist., Mercedes, rehabilitation existing irrigation sys. $500,000. Constr. 1959.

Tex., Seminole—Gaines Co., Courthouse, Seminole bond election Nov. 4, drainage facilities and right-of-way to widen hy. thru county. $350,000.

† **Utah**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., imprv. Provo River Channel, Provo River Proj. $352,000 appropriated. CD 9/19/57.

† **Utah**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo. imprv. South Ogden Lateral sys., Ogden River Proj. $201,000 appropriated. CD 9/7/44.

▲† **Utah**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., Sand Ridge, East Layton and Val Verde pumps, North and South Davis Pumping plant service lines, Davis Aqueduct Sys., incl. West Farmington, Rocks Creek and Woods Cross Laterals and Bountiful Reservoir, Weber Basin Proj. $6,789,000 appropriated. CD 9/7/44.

† **Washington**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., drainage facilities Rosa and Sunnyside Irrigation Districts, incl. power plant, Yakima Project, Rosa Div., $469,000 appropriated; drainage facilities, Rosa and Sunnyside Irrigation Districts, Sunnyside Div., Yakima Project, $156,000.

▲† **Washington**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., laterals and pumping plants, imprv. Esquatze Diversion Canal, Wahluke Branch Canal and Blythe Watermaster Headquarters, Columbia Basin Project. $10,267,000, appropriated. CD 9/16/57.

† **Wisconsin**—U. S. Eng., 517 E. Wisconsin Ave., Milwaukee, dredging Upper Fox River. $300,000 (no appropriation).

† **Wisconsin**—U. S. Eng., 517 E. Wisconsin Ave., Milwaukee, dredging Saxon Harbor. $393,500 (no appropriation).

† **Wyoming**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., repairing river outlet and rehabilitating penstock intakes on Buffalo Bill Dam and constr. laterals and drains in Heart Mountain Div. $534,000 appropriated.

† **Wyoming**—Bureau Reclamation, Dpt. Interior, Bldg. 1A, Denver Federal Center, Denver, Colo., canal and lateral lining, structure replacement and drains, Riverton Project. $662,000 appropriated.

▲† **Wyoming**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., completing Anchor Dam, South Fork Owl Creek, near Thermopolis, Missouri River Basin. $1,227,000 appropriated.

† **Wyoming**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., drains, Hanover Bluff Unit, Missouri River Basin. $170,000 appropriated.

† **Wyoming**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., completing Little Shady Diversion Dam and Eden Reservoir, Farson and Eden area Laterals, Eden and Sandy Areas, West Side Drains. $515,000 appropriated.

▲† **Wyoming**—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., complete 24,000 kw cap. Glendo Power plant and switchyard, continue constr. Fremont Canyon powerplant and switchyard. $11,297,006 appropriated. CD 9/16/57.

▲ **N.W.T., Yellowknife**—Northern Canada Power Comn., 251 Bank St., Ottawa, Ont., power development and spillway modification, Snare Rapids, 90 mi. northwest of here. $2,600,000. Bids in October. CD 5/9/46.

AIRPORTS

† **Alaska, Beaver**—RUNWAY—Dpt. Aviation, Territory of Alaska, Glover Bldg., Anchorage, runway, parking apron, addn. entrance road, $140,000. Constr. 1959. Proj. CD 3/25.

† **Alaska, Hooper Bay**—LANDING STRIP—Dpt. Aviation, Territory of Alaska, Glover Bldg., 4,000 ft. landing strip, parking area, access road and surfacing runway and apron with steel mat. $200,000. John C. Fox, Haines, Alaska, consult. engr. Constr. 1959. CD 3/28.

† **Alaska, Kaltag** — LANDING STRIP — Dpt. Aviation, Territory of Alaska, Glover Bldg., Anchorage, landing strip, parking area and access road. $100,000 Constr. 1959. Gray & Rodgers Assocs., 224 Charles St., Fairbanks, consult. engrs. CD 3/26.

† **Alaska, Ketchikan** — SEAPLANE FACILITIES — Dpt. Aviation, Territory of Alaska, Glover Bldg., Anchorage, enlarging seaplane facilities, $110,000. Felix Toner, 9 Triangle Bldg., Juneau, consult. engr.

† **Alaska, Marshall**—LANDING STRIP—Dpt. Aviation, Territory of Alaska, Glover Bldg., Anchorage, extending landing strip to 2,000 ft. parking area. $112,500. Affiliated Alaskan Architects & Engineers, 627 H St., Anchorage, consult. engrs. Constr. 1959. CD 3/28.

† **Alaska, Shishmaref**—RUNWAY—Dpt. Aviation, Territory of Alaska, Glover Bldg., Anchorage, constr. 2,000 ft. runway with taxiway, parking apron, and related facilities. $100,000. John C. Fox, Haines, consult. engr. Constr. 1959.

† **Fla., Mayport**—RUNWAY—Dist. P. Wks. Office, Naval Base, Charleston, S. C. runway repairs and warmup apron at Mayport Naval Auxiliary Air Station, $200,000. Potter & Head, 5545 Arlington Rd., Jacksonville, consult. engrs. CD 9/6.

† **N. C., Cherry Point**—STORAGE FACILITIES—Dist. P. Wks. Office, Fifth Naval Dist., Bldg. N-26, U. S. Naval Base Norfolk, Va., fuel storage facilities. $250,000. A. E. A. Engineers, Inc., 222 N. Cecil St., Charlotte, consult. engr. CD 9/8.

▲† **O., Wilmington**—CHAPEL, etc.—U. S. Eng., 237 Fourth Ave., Huntington 18, W. Va., plans by Vogt, Ivers, Seaman & Assocs., archts. and consult. engrs., 34 West 6th St., Cincinnati, Zone 2, OQ Men, Chapel with Educational Wing, Exchange Sales and Utilities, Clinton County Air Force Base. CD 9/5.

† **R. I., Newport**—BARRACKS—First Naval Dist., 495 Summer St., Boston, Mass., permanent barracks, 2nd increment, U. S. Naval Air Station, NBy 19252. $500,000. Charles A. Maguire & Assoc., Turks Head Bldg., Providence, R. I., consult. engrs. CD 8/27/56.

† **Tex., Lackland Air Force Base**—HOUSING—Procurement Office, Lackland Air Force Base, San Antonio, plans by Hesson, May & Shipman & Assocs., archts.-consult. engrs, 148 W. Olmos Dr., San Antonio, rehabilitation and imprvs. to 600 Wherry Housing Unit Proj. $350,000. Paul G. Silber, Jr., 150 W. Olmos Dr., San Antonio, consult. engrs. CD 9/14/51.

PUERTO RICO

▲ **Puerto Rico, San Juan**—OFFICE BLDG.—American Investment Corp., c/o Luis E. Dubon, 300 Tanca St., plans 8-10 story office, Martin Pena Sect. $1,000,000. To go ahead in 1959.

U. S. POSSESSIONS

▲ **T. H., Honolulu**—HOUSING—U. S. Eng., P. O. Box 224, Honolulu, Zone 4, constr. 385 units, Sect. 2, Capehart housing at Schofield Barracks, $6,352,500.

▲† **T. H., Honolulu**—HOUSING—U. S. Eng., P. O. Box 224, Honolulu, Zone 4, constr. 481 units, Capehart Housing, Sect. 2, Fort Shafter, $7,936,500.

PUBLIC BUILDINGS

▲ **Ala., Anniston**—HOSPITAL—City, City Hall, 4 story Anniston Memorial Hospital addn. $1,500,000. CD 7/2/56.

▲† **Ala., Fort Rucker**—HOUSING—U. S. Eg., 2301 Grant St., Mobile, constr. Capehart Housing, 400 units, at Fort Rucker Sect. 3, $6,600,000.

† **Alaska, Bethel** — SCHOOL — Territorial Dpt. Educ., Juneau, plans by Linn A. Forrest, 622 Hemlock, Juneau, elementary school. HHFA Proj. No. 58-C-401-88, $700,000. Bids about Jan. 15.

▲ **Ark., Little Rock**—City, City Hall, $1,000,000 bond election Nov. 4, public buildings.

Ark., Paragould—COURT HOUSE AND JAIL—Green Co., County Judge J. Ed. Thompson, Court House, $400,000 bond election Nov. 5, court house and jail, Elmer A. Stuck & Assocs., 217 E. Washington Ave., Jonesboro, archts., CD 7/23/53.

(Continued on page 160)

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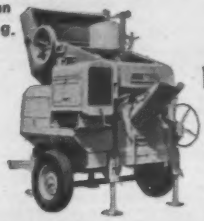

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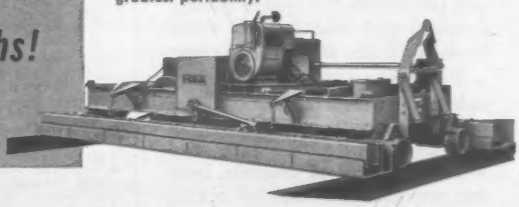

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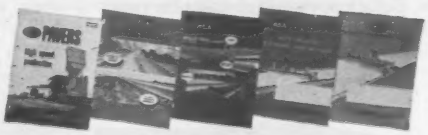

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(Continued from page 158)

Ark., West Memphis—SCHOOL—Hulbert-West Memphis School Dist., plans by Elmer A. Stuck & Assocs., 217 E. Washington Ave., Jonesboro, high school. $350,000.

▲† **Calif., Beale Air Force Base**—HOUSING—Procurement Officer, Beale Air Force Base, Marysville, Capehart Housing, 400 units, Section 2. $6,600,000.

▲ **Calif., Berkeley**—BUS MAINTENANCE, etc.—Alameda Contra Costa Transit Dist., Suite C, Claremont Hotel, bond election Nov. 4, bus maintenance and storage terminals. $1,500,000.

Calif., Fresno—SCHOOL—Washington Union High School Dist., 6041 S. Elm St., defeated bonds Sept. 23, Washington Union High School Addns. $475,000. CD 7/31.

▲ **Calif., Lancaster**—HOSPITAL—Antelope Valley Hospital Dist., defeated $1,400,000 bonds Sept. 23, hospital addns. CD 7/31.

▲† **Calif., Lompoc**—HOUSING—U. S. Eng., P.O. Box 17277, Foy Station, Los Angeles, Capehart Housing, 100 units U. S. Disciplinary Barracks Sect. 2. $1,650,000.

Calif., Los Angeles—CLASSROOM, etc.—Bd. Educ., 1425 S. San Pedro St., plans by William Shinderman, 441 S. Beverly Dr., Beverly Hills, 1 story, classroom and music bldg., Washington High School, 10860 S. Denker Ave. $565,000. CD 6/9.

Calif., Los Angeles—SCHOOL—Bd. Educ., 1425 S. San Pedro St., plans by Bowerman & Hobson, 8512 Whitworth Dr., 11 classroom, Balboa Blvd. School, Balboa Blvd. at Lassen St., Granada Hills. $425,000. CD 6/9.

▲ **Calif., Los Angeles**—NUCLEAR RESEARCH LABORATORY—University of California, 405 Hilyard Ave., plans by Neptune & Thomas, 1560 W. Colorado Blvd., Pasadena, nuclear research laboratory at University California. $4,000,000. CD 7/15/55.

Calif., Merced—JAIL—Merced Co., c/o Courthouse, plans by Paul Shattuck, 1713 M St., 1 story U-shaped 28,250 sq. ft. jail. $850,000.

Calif., Merced—SCHOOL—Merced City Elem. School Dist., 22nd and M Sts., plans by Walter Wagner & Partners, archts.-consult. engrs., c/o Henry Dee Pertuis, Stoddard Bldg. 1935 N. St., Tenaya Junior High School. $423,508. CD 5/6/52.

Calif., San Jose—SCHOOL—San Jose Unif. School Dist., 408 Almaden Ave., plans by Binder & Curtis, 35 W. San Carlos St., Abraham Lincoln High School, addn. $475,000. CD 2/25.

▲ **Calif., Santa Monica**—SCHOOL—Santa Monica Unified School Dist., 1333 6th St., plans by Orr, Strange & Inslee, 3142 Wilshire Blvd., Los Angeles, Junior High School, Zuma Beach, Malibu $1,000,000. CD 6/12/57.

▲† **Colo., Colorado Springs**—HOUSING—U. S. Eng., 1709 Jackson St., Omaha, Neb., Capehart Housing, 200 units, Fort Carson Sect. 2, $3,300,000.

Conn., Cromwell—SCHOOL—Town, Town Hall, plans by Malmfeldt Assocs., 36 Pearl St., Hartford, elementary school, Court St. $430,000. Paul D. Bemis, 36 Pearl St., Hartford, consult. engr. Malcolm N. Crabtree, 36 Pearl St., Hartford, assoc. archt. CD 9/24.

▲† **Conn., Groton**—SUBMARINE BASE HOUSING—Dist. P. Wks. Officer, Third Naval Dist., 90 Church St., New York, N. Y., plans by Kane & Fairchild, 734 Asylum Ave., Hartford, 200 unit Capehart housing, for U. S. Naval Submarine Base personnel, $7,750,000. Jacob Koton Assocs., 919 Albany Ave., Hartford, consult. engrs. CD 9/17.

† **Conn., Groton** — DORMITORY — U. S. Coast Guard Academy, Mohegan Ave., New London, plans by Douglas Orr, 111 Whitney Ave., New Haven, 3 story, brick dormitory bldg., U. S. Coast Guard Academy. $345,000. CD 4/16.

Conn., Hartford—SHOP and YARD FACILITIES—Metropolitan Dist., 115 Broad St., shop and yard facilities South Meadows to replace obsolete quarters on Union St. and New Park Ave. $100,000.

Conn., Milford—SCHOOL—Town, Town Hall, elementary school, Orange Ave. $350,000.

Conn., North Brandford—SCHOOL—Town, Town Hall, plans by Davis, Cochran & Miller, 29 Whitney Ave., New Haven, elementary school (fifth). $380,000.

Fla., Daytona Beach—GARAGE—City, City Hall, plans by David A. Leete, Municipal Airport, public works and bus garage, $150,000.

▲ **Ga., East Point**—HOSPITAL—Tri-County Hospital Auth., hospital. $2,500,000. Bids March 1959. Abreu & Robeson, Inc., 141 Walton St. N. W. Atlanta, consult. engr. CD 8/10/55.

Ga., Statesboro—ART—State Bd. Regents, 244 Washington St. S. W., Atlanta, art and industrial art bldg., Georgia State Teachers College. $450,000.

▲ **Ill., Belleville**—HIGH SCHOOL—Belleville Twp. High School Dist. 201, Bd. Educ., 2600 W. Main St., high school, Union Hill Rd. and Rte. 50, $2,500,000; high school, St. Clair Country Club, $2,500,000; high school, near West Blvd. and B. St. eastern sect. of city, $2,500,000. CD 5/2/55.

▲† **Ill., Granite City**—HOUSING—Corps of Engineers, Chicago Dist., 475 Merchandise Mart, Chicago, Zone 4, Capehart Housing, 65 units Granite City Engineer Depot. $1,072,500. CD 5/16/56.

Ill., Hillside—SCHOOL—School Dist. 93, 4804 Harrison St., plans by Kefer & Cronin, 53 W. Jackson Blvd., Chicago, Hillside Public School addn. 4804 Harrison St. $390,000.

▲ **Ill., Murphysboro**—HOME—Bd. Supervs. Jackson Co., Court House, plans by Pearce & Pearce, Inc., 721 Olive St., St. Louis 1, Mo., 1 story, 40,000 sq. ft., brick, masonry, blocks, steel, concrete nurses home. $1,200,000.

Ill., Skokie—SCHOOL—School Dist. 72, 7040 Laramie Ave., plans by Ganster & Henninghausen, 222 Washington St., Waukegan, (a) Fairview South Grade School addn. incl. swimming pool, auditorium, 7040 Laramie Ave.; (b) Fairview North Grade School addn., 5201 Howard St. $860,000.

▲ **Ind., Bloomington**—UNIVERSITY ADDNS.—Trustees Indiana University, elementary and high school, $2,500,000, audio-visual center, $3,000,000, chemistry bldg. addn., $2,200,000, business bldg. addn., $1,635,000.

Ind., Clermont—RECEIVING CENTER—State Dpt. P. Wks. & Supply, Statehouse, Indianapolis, receiving center for Indiana Girls' School, $499,000.

Ind., Griffith—SCHOOL—Calumet Twp. Dist. School Bd., Calumet Twp., 6111 W. Ridge St., plans by Schutt-Haley & Assocs., 910 Jefferson Ave., Gary, Black Oak Elementary School, Calumet Twp. $412,460.

▲ **Ind., Indianapolis**—SCHOOL FOR DEAF—State Dpt. P. Wks. & Supply, Statehouse, infirmary, $618,600; student union bldg. with pool and basketball courts, $530,000, at School for the Deaf, CD 3/8/56.

▲ **Ind., Lafayette**—VETERINARY SCHOOL, etc.—Purdue University, veterinary school addn., $3,700,000; physics bldg., $2,100,000; pharmacy bldg., $1,000,000, classroom bldg., $1,700,000; civil engineering bldg., first phase, $2,800,000. 1959-61 program.

▲ **Ind., Muncie**—MUSIC AND ENGLISH, etc.—Trustees, Ball State College, completion of Music and English bldg., $1,900,000; physical education bldg., $1,500,000. 1959-61 program. CD 5/16.

▲ **Ind., Pendleton**—REFORMATORY ADDNS.—State Dpt. P. Wks. & Supply, Statehouse, Indianapolis, power plant, $859,980, inmate quarters, $990,000, storage and shop bldg. and vocation training bldg., $106,000, Indiana Reformatory, CD 6/22/55.

▲† **Ind., Peru**—HOUSING—Bunker Hill Air Force Base, Procurement Officer, Capehart Housing, 250 units, Bunker Hill Air Force Base, Sect. No. 2, $4,125,000.

Ind., Plainfield—DORMITORY—State Dpt. P. Wks. & Supply, Statehouse, Indianapolis, dormitory for boys, Plainfield Boys' School. $500,000, CD 11/16/54.

▲ **Ind., Terre Haute**—PHYSICAL EDUCATION—Trustees, Indiana State Teachers College, physical education bldg. $2,000,000.

Iowa, Iowa Falls—COLLEGE—City, City Hall, plans by Architects Associated, Inc., 206 Davidson Bldg., Des Moines, classrooms, auditorium, library and offices, Ellsworth Junior College, $350,000.

▲† **Kan., Fort Leavenworth**—HOUSING—U. S. Eng., Kansas City Dist., 1800 Federal Office Bldg., 911 Walnut St., Kansas City 6, Mo., Capehart Housing, 200 units. Section No. 3. $3,300,000.

▲ **Kan., Garden City**—COMMUNITY—City, City Hall, Proj. Kan. 14-P-3012-community bldg. $1,500,000.

Kan., Olathe—NURSING HOME—Johnson County Welfare Advisory Bd., c/o Bd. Comrs. Johnson Co., Court House, plans by Mackie & Roark, A.I.A., 7133 W. 80, Overland Park, Kan., and John Lawrence Daw A. I. A., 5509 Brookside, Kansas City, Mo., 3 story, fireproof, 100-Patient County Nursing Home for Aged. $600,000. CD 6/2.

▲† **Kan., Topeka**—HOUSING—Base Procurement Office, Forbes Air Force Base, Capehart Housing, 414 units, Forbes Air Force Base, Section No. 2. $6,831,000.

▲ **Ky., Bowling Green**—HOSPITAL—City-County Hospital, plans by Otis & Grimes, Tyler Bldg., 319 W. Jefferson, Louisville, Zone 2, hospital addn. $1,200,000.

Ky., Columbia—HOSPITAL—Adair County Fiscal Court, Columbia, plans by Otis & Grimes, Tyler Bldg., 319 W. Jefferson, Louisville, Zone 2, 25-bed hospital. $400,000.

Ky., Fort Knox—SCHOOL—Fort Knox Independent School Dist., plans by Wm. G. Crawford, 4030 Alton Rd., Louisville, Zone 7, 1 story, brick, concrete slab, built up roof elementary school. Over $400,000. Southern Engineering Co., 322 W. Jefferson, Louisville, Zone 2, consult. engr.

▲ **Mass., Boston**—HOUSING for ELDERLY—City Housing Auth., 230 Congress St., housing for the elderly, 400 units. $2,000,000-$4,000,000. (Federal Aided).

Mass., Mendon—SCHOOL—Towns Mendon and Upton, Supt. Schools, Mendon, Bellingham, plans by S. W. Haynes & Assoc., Inc., 336 Main St., Fitchburg, Junior-Senior High School. $650,000. Constr. 1959. CD 5/29/56.

† **Mass., Natick**—HOUSING—U. S. Eng., New England Div., 150 Causeway St., Boston, Zone 14, Capehart Housing, 35 units, at Quartermaster Research and Engineering Center. $577,500.

Mass., Oakdale—RESIDENTIAL BLDG.—TREATMENT UNIT—Commonwealth of Mass., Youth Service Bd., c/o Div. Bldg. Constr., 38 Chauncy St., Boston, plans by Edward J. Tedesco, 17 Pleasant St., Woburn, residential bldg.-treatment unit. $350,000. Constr. 1959.

Mass., Revere—SCHOOL—City, School Dpt., 153 Beacon St., plans by Priestley Assoc., 9 Newbury St., Boston, Mass., elementary school, Ward No. 4. $405,000. Bids in 1959.

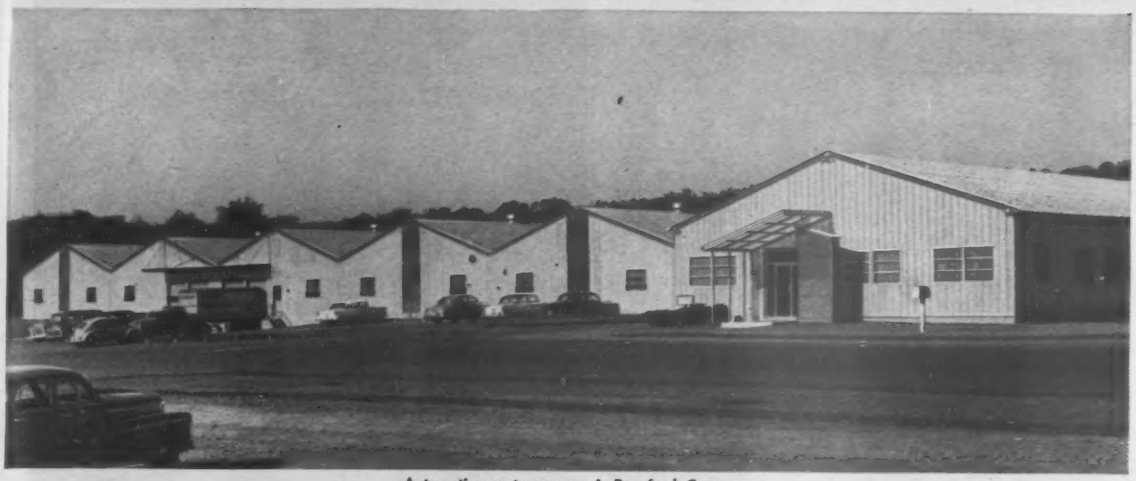
▲ **Mass., Walpole** — SCHOOL — Town, Supt. Schools, Stone St., plans by Shepley, Bulfinch, Richardson & Abbott, 1 Court St., Boston, Mass., Junior High School, East and Washington Sts. $1,000,000.

▲† **Mich., Kinross**—HOUSING—Base Procurement Office, Kinross Air Force Base, Capehart Housing, 475 units, Kinross Air Force Base. $7,837,500. CD 3/12, under Airports.

▲† **Mich., Marquette** — HOUSING — Base Procurement Office, K. I. Sawyer Airport, plans by Hugh Johnson & Assoc., 2000 "P" St. N. W., Wash., D. C., Capehart Housing, 360 units, K. I. Sawyer Airport, Section No. 3. $5,940,000. CD 3/12, under Airports.

▲† **Mich., Oscoda**—HOUSING—Base Procurement Office, Wurtsmith Air Force Base, Capehart Housing, 618 units, Wurtsmith Air Force Base. $10,197,000.

(Continued on page 163)



Automotive parts company in Branford, Conn.

A large metal fabricating plant in Toronto, Canada

A shoe factory in Pittsfield, New Hampshire

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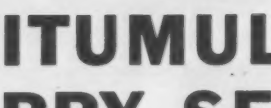


*By permission of Beech-Nut Life Savers, Inc., for candies

LEFT: A typical section of pavement to be treated with Bitumuls Slurry Seal in Rochester. RIGHT: The same pavement section after treatment with Bitumuls Slurry Seal. (Note how the crack in the foreground has been sealed).

The City of Rochester, New York, was faced with a problem common to many communities today: keep all streets maintained in serviceable condition; yet do it at a cost that will permit the complete replacement (out of Maintenance Department funds) of many miles of streets that are over-aged.

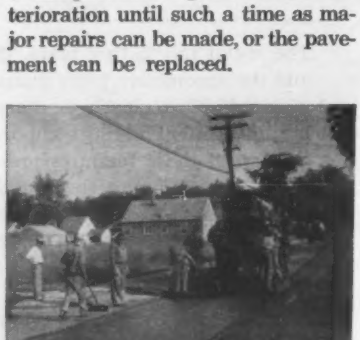
Problem: How can you keep overall maintenance costs low enough to permit planned replacement of certain streets?

Answer: Bitumuls Slurry Sealing . . . a "life saving" technique for keeping distressed pavements in "good working order". Streets that were badly oxidized, cracked and open-textured due to a combination of age, heavy traffic, and winter weather were readily rejuvenated by the sealing, crack-filling and void-filling properties of Bitumuls® emulsified asphalt slurry.

Bitumuls Slurry Seals actually provided a holding action against wear and weather at extremely low cost. Savings over former methods were pronounced because very-costly winter patching of chuck-holes was completely eliminated. As a result, expenditures for repair and control of winter damage were **reduced by almost seventy percent!**

The money thus saved was diverted to reconstruction of streets that were beyond maintenance or repair.

Bitumuls Slurry Sealing is normally . . . and should be . . . regarded as only a **temporary treatment** for distressed pavements. Adequate repairs or pavement-replacement must eventually be made. Yet it is truly a "Life Saver", since it seals, protects and preserves any basically sound pavement against further deterioration until such a time as major repairs can be made, or the pavement can be replaced.



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Inglewood, Calif.
San Juan 23, P. R.

(Continued from page 160)

▲† **Mich., Selfridge Air Force Base**—HOUSING—Base Procurement Office, Selfridge Air Force Base, Capehart Housing, 580 units. $9,570,000.

▲† **Minn., Duluth**—HOUSING—Base Procurement Office, Duluth Air Force Base, Capehart Housing, 125 units, Duluth Air Force Base, Section No. 2. $2,062,500.

Minn., Lanesboro—SCHOOL—Bd. Educ. plans by Fladsmith & Assocs., Younger Bldg., Winona, high school. $400,000.

▲ **Minn., Circle Pines** — SCHOOL — Bd. Educ. Special School Dist. No. 12, voted $1,650,000 bonds Sept. 23, high school. Constr. 1959.

▲† **Miss., Biloxi**—HOUSING—Base Procurement Office, Kessler Air Force Base, Capehart Housing, 290 units, Kessler Air Force Base. $4,785,000.

Miss., Tupelo—SCHOOL—Bd. Educ. plans by E. L. Malvaney & Assocs., Millsaps Bldg., Jackson, and R. B. McKnight and Mae Feemster, Tupelo, 3 story, 64,817 sq. ft. high school, 3 parking areas on 27-acre tract between Hys. 6 and 45S. $900,000.

▲ **Mo., Eureka** — SCHOOLS — School Dist. R-6, Bd. Educ., Hy. 66, Eureka, voted $1,210,000 bonds Sept. 23, high school, Clayton and Valley Rds. $500,000; Junior High with gymnasium and cafeteria, $550,000; addns. to Ballwin, Chesterfield and Ellisville Schools, $160,000. Pearce & Pearce, Inc., 721 Olive St., St. Louis, Zone 1, archt. CD 9/18.

▲† **Mo., Knob Noster**—HOUSING—Base Procurement Office, Whiteman Air Force Base, Capehart Housing 154 units, Whiteman Air Force Base. $2,541,000.

Mo., St. Charles—SCHOOL—Bd. Educ., St. Charles School Dist., 700 Monroe St., plans by Charles W. Lorenz, 700 N. Ballas Rd., Kirkwood, Zone 22, Junior High School and elementary school addn. Over $375,000.

▲† **Mont., Glasgow** — HOUSING — Procurement Office, Glasgow Air Force Base, Glasgow, Capehart Housing, 460 units, Glasgow Air Force Base. $7,590,000. CD 3/12, under Airports.

▲† **Neb., Fort Crook**—HOUSING—Procurement Office, Offutt Air Force Base, Omaha, Capehart Housing, 216 units, Offutt Air Force Base, No. 2. $3,564,000.

▲ **Nev., Reno**—DORMITORY, etc.—University of Nevada, Ross Hall, dormitory, 4 apartment bldgs. with dining hall. $1,382,000. CD 11/27.

▲† **N. H., Portsmouth**—HOUSING—Procurement Office, Pease Air Force Base, Portsmouth, 483 units Capehart Housing, Pease Air Force Base. Sect. No. 2. $7,969,500.

N. H., Tamworth or Ossipee—SCHOOL—Towns Madison, Tamworth, Ossipee, Freedom, Effingham, Wakefield and Brookfield, Robert Chick, chn. School Bldg. Comm., Madison, plans by Alfred T. Granger Assoc., Granger Circle, Hanover, Consolidated High School. $600,000. Constr. 1959.

▲ **N. J., Centerville**—SCHOOL—Bd. Educ., Raritan Twp., Middle Rd., high school, Raritan Twp. $1,500,000-$2,000,000.

N. J., Hanover—SCHOOL—Bd. Educ., East Hanover Twp., referendum for approval and issuance of bonds Oct. 24, Central School addn., East Hanover, $450,000.

N. J., Maple Shade—SCHOOL—Bd. Educ. voted bonds Sept. 16, elementary school and Mill Road School addn. $450,000. Faint D'Anastasio, 5521 Westfield Ave., Pennsauken, archts. Bids soon. CD 8/7.

▲ **N. J., Parsippany**—SCHOOL—Bd. Educ., Twp. of Parsippany-Troy Hills, plans by Alex Merchants Assocs., 1 Elm Row, New Brunswick, high school and Central School addns. $1,325,000. CD 7/19/57.

N. J., Plainsboro—SCHOOL—Plainsboro Twp. Bd. Educ., Plainsboro School, Princeton Rd., Plainsboro elementary school addn. $470,000.

N. J., Pompton Plains—SCHOOL—Bd. Educ., Twp. of Pequannock, plans for survey only by La Pierre & Litchfield, 292 Madison Ave., New York, N. Y., twp. school addns., Pequannock. $500,000.

N. J., Stirling—SCHOOL—Bd. Educ., Twp. of Passaic, plans by Alfonso Alvarez, 243 Lorraine Ave., Upper Montclair, Central School addn. $350,000. CD 6/20.

▲ **N. J., Trenton**—SCHOOL—Bd. Educ., Ewing Twp., Parkway Ave., voted $1,898,000 bonds Sept. 23. Junior High School-Elementary School, Ewingville Rd. and Green Lane. CD 8/19.

▲† **N. M., Las Cruces**—HOUSING—U. S. Eng., P. O. Box 1538, Albuquerque, Capehart Housing 200 units, White Sands Missile Range, No. 2. $3,300,000.

▲ **N. Y., Mount Vernon**—HOUSING—Mount Vernon Housing Auth., 1 Eastchester Lane, Housing Proj., 3 story, brick housing, West 54 St. between 8 and 9th Aves. $1,950,000.

▲† **N. Y., Rome**—HOUSING—Base Procurement Office, Griffiss Air Force Base, Capehart Housing, 270 units, Griffiss Air Force Base, Section No. 2. $4,455,000.

▲† **N. C., Fort Bragg**—HOUSING—Corps of Engineers, Wilmington Dist., P. O. Box 1890, Wilmington, Capehart Housing, 367 units. Fort Bragg No. 3, $6,055,500. CD 7/28.

O., Centerville—SCHOOL—Washington Twp. Bd. Educ., voted bonds Sept. 23, elementary school, $940,000. Walker, Norwich & Assoc., 12 W. Monument Ave., Dayton, archts. CD 8/18.

▲† **O., Wilmington**—HOUSING—U. S. Eng., 237 Fourth Ave., Huntington 18, W. Va., Capehart Housing, 536 units. Clinton County Air Force Base. $8,844,000.

▲ **Okla., Boise City**—HELIUM EXTRACTION PLANT—Dpt. Interior, Interior Bldg., 19 and C Sts., Wash., D. C., helium extraction plant, $12,000,000. CD 8/9/54.

▲† **Okla., Fort Sill**—HOUSING—Corps of Engineers, Box 61, Tulsa, 349 unit Capehart Housing. $5,758,500.

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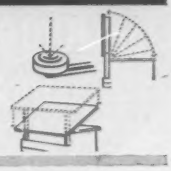

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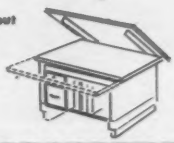

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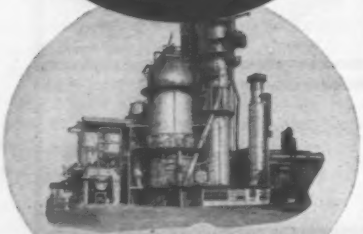

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Okla., Oklahoma City—HIGH SCHOOL—Bd. Educ., 911 North Klein St., Senior High School, N. W. 98 St. and May Ave., $750,000. CD 3/31.

Okla., Tulsa—SCHOOL—Bd. Educ., 410 S. Cincinnati, plans by John Cushing, 4107 E. 11 St., Walt Whitman Elementary School, N. 38 St. and Johnstown Rd., $500,000. CD 5/27.

Pa., Camp Hill—SCHOOL—Camp Hill School Bd., $520,000 bond election Nov. 4, Camp Hill High School addns., incl. addnl. classrooms, auditorium, gymnasium expansion, music and shop rooms. CD 7/24.

Pa., East Smithfield—SCHOOL—Pa. P. School Bldg. Auth., 25th and Market Sts., Harrisburg, school bldg. for Smithfield-Ridgebury-Uister Joint School Dist., Proj. 817-647, $450,000.

Pa., Ruffsdale—SCHOOL—Pa. Pub. School Bldg. Auth., 25th and Market Sts., Harrisburg, school bldg. for South Huntingdon Twp. School Dist., Proj. 815-596. $500,000.

▲ **Pa., Somerset**—SCHOOL—Pa. P. School Bldg. Auth., 25th and Market Sts., Harrisburg, school bldg. for Somerset Joint School Dist., Proj. 818-662, $2,180,000.

Pa., Swarthmore—SCHOOL—Swarthmore Rutledge School Auth., College Ave., plans by George M. Ewing Co., archt.-engr. Western Savings Fund Bldg., Phila. high school (new) $750,000. CD 3/1/57.

† **Pa., University Park**—ACCELERATORS, etc.—U. S. Atomic Energy Comn., Germantown, Md., two accelerators, beam analyzing sys. and magnet Penn State University, Proj. 59-e-3. $950,000.

Pa., Upper Darby—SCHOOL—Upper Darby School Bd., Lansdowne Ave. and School Lane, plans by Barney Banwell Armentrout & Divens, Girard Trust Bldg., Phila., Beverly Hills Jr. High School addns., alterations. $344,000.

▲† **S. C., Greenville**—HOUSING—Procurement Office, Donaldson Air Force Base, Greenville, Capehart Housing, 275 units, Donaldson Air Force Base. $4,537,500. CD 9/25, under Airports.

▲† **S. D., Rapid City**—HOUSING—Procurement Office, Ellsworth Air Force Base, Rapid City, Capehart Housing, 220 units, Ellsworth Air Force Base. $3,630,000.

S. C., Waterboro—HOSPITAL—Colleton Co., plans by John H. Truluck, P. O. Box 17, hospital addn. $500,000. CD 8/28.

▲ **Tex., Alice**—HOUSING—City Housing Auth., 200 unit housing. $2,000,000.

▲ **Tex., Arlington**—ENGINEERING, etc.—Texas Agriculture & Mechanical College Sys., College Station, engineering, $1,800,000; waterworks, $75,000; hard-paved covered and uncovered parking center, $100,000; sanitary sewers, $75,000, all for Arlington State College. Constr. 1959. CD 12/13/57.

Tex., Deer Park—SCHOOL—Deer Park Ind. School Dist. plans by Emory S. White & Arne G. Engberg, 2017 S. Shepherd Dr., Houston, W. A. Carpenter Elementary School, $745,000. Walter P. Moore, 2 Pinedale St., Houston, and Raymond L. Jenkins, 4316 Blossom St., Houston, consult. engrs. CD 1/30.

▲† **Tex., Fort Sam Houston**—HOUSING—U. S. Eng., Box 1229, Galveston, Capehart Housing, 183 units. $3,019,500.

▲ **Tex., Garland**—POWER PLANT, etc.—City, City Hall, voted bonds Sept. 27, electric power plant expansion. $4,750,000; electric power lines, $750,000. CD 8/18/55.

Tex., Houston—RELIGIOUS CENTER—University of Houston, 3801 Cullen Blvd., plans by Frank C. Dill, 1211 Hyde Park Blvd., non-denominational Religious Center. $500,000. CD 9/18.

Tex., San Antonio—SCHOOL—Harlandale, Ind. School Dist., 300 W. Huff Ave., plans by Adams & Adams, 500 W. Hutchins Pl., elementary school, Gillette Blvd. $350,000. CD 5/16.

Tex., Snyder—HOSPITAL—Cogdell Memorial Hospital, Scurry Co., hospital, $500,000.

Tex., Tatum — SCHOOL — Tatum Ind. School Dist., Tatum, school. $350,000.

† **Va., Fort Belvoir**—PETROLEUM TEST FACILITY—U. S. Eng., First and Douglas Sts. N.W., Wash. 25, D. C., plans by Mills, Petticord & Mills, 3308 14 St. N.W., Wash., D. C., petroleum test facility, $100,000-$500,000. CD 9/18/57.

▲† **Va., Fort Eustis**—HOUSING—U. S. Eng., P. O. Box 119, Norfolk, Capehart Housing, 223 units. $3,679,500.

Wash., Cheney—SCHOOL—Cheney School Dist., plans by Victor L. Wulff, 1526 W. Riverside, Spokane, elementary school. $480,000.

▲ **Wash., Ellensburg**—LIBRARY—Central Washington College of Education, Ellensburg, 82,500 sq. ft. library, $1,344,288, Work may begin next year.

▲ **Wash., Longview**—SCHOOL—School Bd. plans by McGuire & Muri, 231 Broadway, Tacoma, Lower Columbia Junior College addn., $1,000,000. Bids this fall. CD 12/18/57.

▲† **Wash., Richland**—PRODUCTION REACTOR—Atomic Energy Comn., 1901 Constitution Ave., Wash. 25, D. C., production reactor for special nuclear materials, convertible type, Proj. 59-a-5 and supporting facilities, at Hanford Works. $145,000,000. General Electric Co., River Rd., Schenectady, N. Y., consult. engr. CD 9/12.

▲ **Wash., Sunnyside**—SCHOOL—School Dist. 201 plans by Gochnour & Marble, Miller Bldg., Yakima, Junior High School. $1,400,000. CD 3/21.

▲ **Wash., Walla Walla**—SCHOOL—School Dist. No. 140, $2,300,000 bond election Nov. 4, second high school.

Wis., Coleman—SCHOOL—Bd. Educ. plans by R. W. Surplice, 131 Main St., Green Bay, high school, $600,000. Constr. in Spring.

▲† **Wis., Madison**—HOUSING—Truax Field Procurement Office, Madison, Capehart Housing, 280 units, Truax Field. $4,620,000. CD 3/26/56.

Wis., Mukwonago—SCHOOL—Bd. Educ., Mukwonago, plans by R. N. Le Vee & Assocs., 1000 W. College Ave., Appleton, Clarendon Grade School addn. $465,000.

▲ **Alta., Calgary**—CITY HALL—City, City Hall, constr. city hall, $3,000,000. CD 4/12/51.

Ont., London—SCHOOL—East Middlesex High School Bd., John Kennedy, chmn., plans by Riddle, Connor & Assoc., 422 Wellington St., part one, part two story, 220 x 380 ft. brick, block high school, Oxford St. $990,000. McGregor & Beynon Ltd., 2510 Yonge St., Toronto, consult. engrs. CD 7/25.

Ont., London—SCHOOL—London Twp. School Area No. 2, Gordon Sleightholm, supt. Pub. Schools, plans by R. D. Schoales, staff archt., 376 Maitland St., school, $350,000.

▲ **Ont., Toronto**—CITY HALL—City, City Hall, plans by Viljo Revell, Helsinki, Finland, 3 story, bsmnt., with one 31 story and one 25 story, concrete, glass city hall, with reflecting pool. $18,000,000.

Que., Plessiville—ARTS & TRADES SCHOOL—Provincial Dpt. of Youth & Social Welfare, Parliament Bldgs., Quebec City, plans by J. Berchmans Gagnon, 97 Notre Dame St. S., Thetford Mines, arts and trades school, $450,000. Letendre, Monti & Assoc., 3810 rue Laval, Montreal consult. engrs.

COMMERCIAL BUILDINGS

▲ **Calif., Pasadena**—STUDENT HOUSES, etc.—California Institute of Technology, 1201 E. California St., plans by Smith, Powell & Morgridge, 208 W. 8th St., Los Angeles, student houses, graduate student center, student union and coffee shop, $3,750,000; plans by Periera & Luckman, 9220 Sunset Blvd., Los Angeles, 6 story, rein.-con. library on campus, $2,400,000; convert high voltage research bldg. into mathematics-physics bldg. at Calif. Institute of Technology campus, $1,100,000, Holmes & Narver, 828 S. Figueroa St., Los Angeles, consult. engrs., biology bldg. addn. $900,000.

Calif., Sacramento—HOME SUBDIVISION—Price & Reynolds, 8904 Rosewood Dr., 59 home subdivision, Montezuma Circle, near here. $695,700.

▲ **Calif., Santa Clara**—STUDENT UNION, etc.—University of Santa Clara, c/o President, Santa Clara, plans by Binder & Curtis, 35 W. San Carlos St., San Jose, Calif., student union and dormitory, $1,500,000; engineering bldg., $1,000,000; science annex, $450,000. CD 1/13.

Calif., Santa Cruz—SUPERMARKET—Lucky Stores, 1701 1st St., San Leandro, supermarket, Morrisey Blvd., Pacheco-Soquel Aves. $400,000.

Conn., Bridgeport—BANK—Black Rock Bank & Trust Co., 2834 Fairfield Ave., bank addn., 659 Brewster St. $350,000.

▲ **Conn., Hartford** — COMMUNITY CENTER — Hartford Jewish Community Center, 1015 Asylum Ave., plans by Architects Collaborative, 63 Brattle St., Cambridge, Mass., community center bldg., Watkinson School Tract, Bloomfield Ave. $1,000,000.

Conn., Milford—BOWLING ALLEY—Pascone Constr. Co., Inc., 115 Front St., Bridgeport, bowling alley, Post Rd. $500,000. Bowlers Group, Inc., 76 Beavers, New York, N. Y., lessee.

▲ **Conn., New Canaan**—CHURCH—St. Mark's Episcopal Church, 117 Oenoke Ridge, plans by Sherwood, Mills & Smith, 65 Broad St., Stamford, church, Fellowship Hall and Sunday School, Oenoke Ridge. $1,000,000. Werner-Jensen & Korst, 641 Summer St., Stamford, consult. engrs. CD 6/10.

▲ **Conn., New Haven**—OFFICE—First New Haven National Bank, 42 Church St., plans by Douglas Orr, 111 Whitney Ave., 8 story, 112,000 sq. ft., 70x200 ft. office bldg., Chapel St., part of Church St. redevelopment project. $3,000,000. CD 6/19/57.

▲ **Conn., Norwalk** — RECREATION CENTER — **Yates & Kavanewisky, Inc.**, 157 Main St., 32 bowling alleys, roller skating rink, ice skating rink, recreation center Post Rd. "Rip Van Winkle Bowlerskate". $1,300,000.

▲ **Fla., Tampa**—RESIDENCES—Gulf Constr. & Development Corp., 1020 N. 25 St., 600 residences. $4,500,000. Pimm Eng. Co., Co., 104 Jackson St., consult. engrs.

Idaho, Lewiston—HOSPITAL—St. Joseph's Hospital, Lewiston, 2 or 3 story hospital addn. $600,000. Work may start by Jan. 1.

▲ **Ill., Chicago**—OFFICE—Hartford Fire Insurance Co., 175 W. Jackson Blvd., 82,000 sq. ft. multi-story office, Wacker Dr. from Monroe to Adams Sts., $15,000,000. CD 9/23.

▲ **Ill., Des Plaines**—SHOPPING CENTER—Robert R. Scher, 33 N. LaSalle St., Chicago, plans by A. Epstein & Sons, Inc., 2011 W. Pershing Rd., Chicago, 16 unit shopping center, incl. parking area, Wolf and Golf Rds. (Cumberland Terrace). $1,000,000. CD 11/14, under M. Susan & Co., 125 W. Hubbard St., Chicago, as owner.

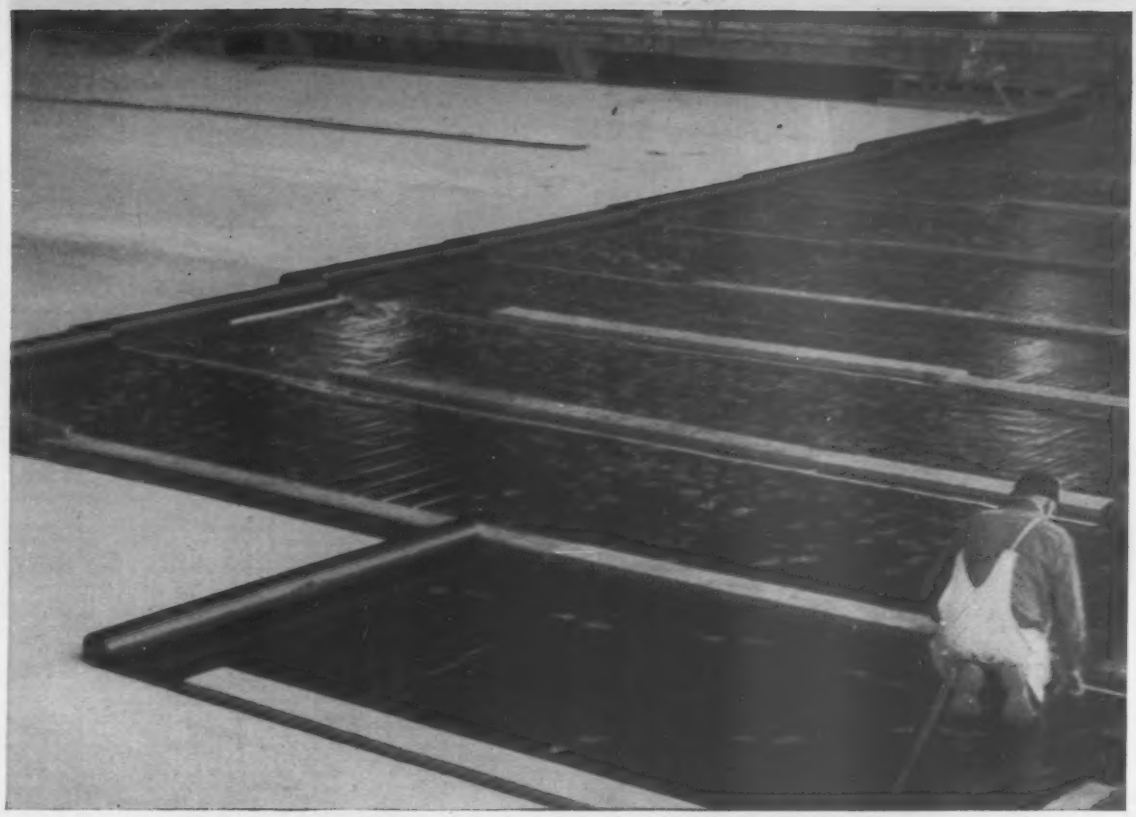
▲ **Ill., Des Plaines**—HOSPITAL—Sisters of Holy Name Nazareth, N. River Rd., plans by Burnham & Hammond, 53 W. Jackson Blvd., Chicago, Holy Family Hospital, River and Golf Rds. $2,800,000. CD 9/30.

▲ **Ill., Markham**—HOMES—Country Aire Builders, 152nd and Wood Sts., Harvey, 700 homes, incl. paving, sewers, water mains, 152nd and Kedzie Sts. $10,000,000.

Ky., Lexington—HUMANITIES—Transylvania College, 200 W. 3rd St., plans by John Gillig & Norman Chrisman, Jr., 180 Walnut St., humanities bldg. $500,000.

La., New Orleans—HOSPITAL—The Sara Mayo Hospital, 609 Jackson Ave., plans by Jones, Roessle & Von

(Continued on page 166)



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(Continued from page 164)

Osthof, Maison Blanche Bldg., 3 story hospital wing. $788,000.

Me., Portland—SHOPPING CENTER—Pine Tree Shopping Center, c/o Columbia Market, 334 Forest Ave., plans by Sumner Shein, 271 Huntington Ave., Boston, Mass., shopping center, Brighton Ave. $350,000. CD 9/11/56.

Mo., Normandy (St. Louis 21, P. O.)—NOVITIATE, etc.—Sisters of Divine Providence, 8351 Florissant Rd., Normandy, Zone 21, plans by Maguolo & Quick, 4908 Delmar Blvd., St. Louis 8, Mo., novitiate and motherhouse addn.; chapel and classroom, Mount Providence Boarding School for Boys, Florissant Rd. Over $350,000.

▲ Mo., St. Louis—TREATMENT—St. Louis University, 221 N. Grand Blvd., Zone 3, 4 story, 35,000 sq. ft. treatment bldg., 1325 S. Grand Blvd. $1,000,000.

N. J., Camden—HOTEL—Owner, c/o Cox & Guttman, archts., 709 Market St., hotel (conversion from factory). $344,000. William E. Foley, 724 Market St., engr. Bids soon.

▲ N. J., Red Bank—SCHOOL—Parish of St. James, Drummond Place, and Archdiocese of Trenton, 3 story elementary school, Peters Place. $1,000,000.

N. J., Shrewsbury—SUPERMARKET—Jos. J. Fratantonio, 12 Broad St., Red Bank, 24,000 sq. ft. supermarket for lease to A & P, Newman Spring Rd. $350,000.

N. J., West Trenton—COUNTRY CLUB—Trenton Country Club, West Trenton, plans by Mickleweright & Mountford, East Stuyvesant Ave. and Prospect St., Trenton, country club modernization. $450,000. Bids in October.

N. J., Yardville—HOME—Roman Catholic Diocese, 1101 Lawrence Rd., Trenton, plans by Thomas Henry Moran, State and Jefferson Rds., Princeton, St. Elizabeth's Home. $344,000.

▲ N. Y., Flushing—HOSPITAL—Flushing Hospital, 144-14 Parsons Blvd., Flushing, hospital addn. $3,000,000. (Correction-contract not awarded). CD 9/30, under CA.

▲ O., East Cleveland—APARTMENT—Coventry Park Co., Inc., 15103 Euclid Ave., Cleveland, Zone 12, plans by Keeva J. Kekst, 6523 Euclid Ave., Cleveland, Zone 18, 13 story, air-conditioned, brick, aluminum trim apartment, incl. garage for 150 cars, Terrace Rd., opposite Huron Rd. Hospital. $3,500,000. Constr. in December.

▲ O., Wadsworth—SHOPPING PLAZA—Commercial Realty Shares, Inc., 1069 E. Market St., Akron, shopping plaza on 17½ acre site Rte. 94, north of here, $1,000,000.

Okla., Oklahoma City—Y.M.C.A.—Young Men's Christian Assn., 130 N.W. Fifth St., Y.M.C.A. bldg N.W. 92 and Pennsylvania Sts. $400,000.

Okla., Tulsa—SCIENCE CLASSES—University of Tulsa, 600 S. College St., plans by McCune & McCune, Utica Sq., Oliphant Hall science classes, University of Tulsa. $400,000. CD 10/6/44.

▲ Pa., Beaver Falls—COLLEGE—Geneva College, Beaver Falls, college, incl. 8 new bldgs., field house, admin., chapel and dormitories. $4,500,000. Constr. next 10-12 years.

▲ Pa., Ephrata—HOSPITAL—Ephrata Community Hospital, Martin Ave., hospital. $1,200,000.

Pa., New Britain — DORMITORY — National Agriculture College plans by Martin & Gilmour, Doylestown, 2 dormitory bldgs. and 2 faculty houses. $456,000.

R. I., Portsmouth—MONASTERY, etc.—Portsmouth Priory & School, Corey's Lane, plans by Pietro Belluschi, 77 Mass. Ave., Cambridge, Mass., and Anderson, Beckwith & Haible, 11 Beacon St., Boston, Mass., monastery and church. $1,000,000. Bids in November. CD 6/11/57.

▲ S. C., North Charleston—SHOPPING CENTER—Pinehaven Shopping Center, Inc., Deward Kronsberg, pres., Dual Lane, Hy., shopping center. $1,000,000.

Tenn., Knoxville—MOTEL, etc.—H. D. Wynn, c/o Barber & McMurray, archts., 2505 Kingston Pike, SW, 100 rooms with 500 seat banquet facilities motel-restaurant combination. $700,000.

▲ Tex., Houston—DWELLINGS—Ralph Beeler, Contractor, 8115 Easthaven Blvd., 33 dwellings, $367,500; 30 dwellings, $355,100; 36 dwellings, $360,000; 29 dwellings, $347,500, in Beverly Hills Addn.

▲ Tex., Houston—BANK AND OFFICE—First City National Bank, 921 Main St., plans by Skidmore, Owings & Merrill, 425 Park Ave., New York, N. Y. and Wilson Morris, Crain & Anderson, 333 Graustark St., Houston, 37 story above ground and 5 story underground bank-office, underground parking $22,000,000. Rob. J. Cummins, Bankers Mtg. Bldg., Houston, Tex. consult. engr. CD 7/18.

Tex., Houston—DWELLINGS—A. B. Keese Contractor, 1725 Woodcrest St., 31 dwellings, Beverly Hills Addn. $356,500.

▲ Tex., Houston—DWELLINGS—J. E. King, John Paine & Dave Kemp, 3501 Bingle St., 36 dwellings $391,500 34 dwellings $378,150; 30 dwellings $368,700, in Langewood off Hempstead Hy.

Tex., Houston—DWELLINGS—Prichard & Tresch Constr. Co. Home Builders, 7915 Bellfort St., plans by L. B. Wootters, 2706 Richmond Ave., 22 dwellings, Lazybrook Subdivision, $365,000.

▲ Tex., Houston—DWELLINGS—Scholz Homes, Inc., Frank H. Marsters, 9011 Silver Spring St., 29 dwellings, $362,500; 12 dwellings, $360,000; 21 dwellings, $346,500.

Tex., Houston—DWELLINGS—South Houston Lumber Co., 8115 Easthaven Blvd., 37 dwellings $370,000, Beverly Hills Addn.

Tex., Houston—BOWLING CENTER—Southland Center Bowling Lanes, 3500 Old Spanish Trail, 28 lane bowling center, Old Spanish Trail. $450,000.

▲ Tex., Houston—DWELLINGS—Rudy Steffler, Builder, 4923 Hill St., 36 dwellings $414,000; 33 dwellings $379,500, 34 dwellings $391,000, Beverly Hills Addn.

Tex., Houston—HOMES—Wier Constr. Co., 5151 Holmes Rd., 42 Wier type homes. $365,500; 31 Wier type homes $357,750.

Tex., San Antonio—DWELLINGS—Lloyd A. Denton, Contractor, 8502 Sagebrush St., 28 dwellings, $368,000; 14 dwellings, $350,500, in various subdivisions.

Tex., San Antonio—DWELLINGS—E. S. Johnson, Contractor, 3659 Culbera Ave., 16 dwellings. $357,500.

Tex., San Antonio—DWELLINGS—S. B. McSwine Constr. Co., 335 Olmos Dr. West, 19 dwellings. $349,100.

Tex., San Antonio—DWELLINGS—S. B. McSwine Constr. Co., 335 Olmos Dr. West, 18 dwellings, East Terrell Hills, Unit No. 1, $365,125.

Tex., San Antonio—DWELLINGS—Monroe May Constr. Co., 1112 Bandera Rd., 18 dwellings, Hillcrest and Inspiration Hills, $360,000.

Tex., San Antonio—DWELLINGS—Ed. Robertson, Contractor, 316 Harmon St., 33 dwellings, Madonna Village. $361,000.

Tex., San Antonio—DWELLINGS—Robertson Brothers Constr. Co., 316 Harmon Dr., 40 dwellings, $360,000; 24 dwellings, $372,400. Northwest Park, Madonna Village and Fairlawn addns.

Tex., San Antonio—DWELLINGS—Douglas Scrutchin Constr. Co., 6936 San Pedro Ave., 30 dwellings, Dellcrest Unit No. 2, Ridgeview and Hollywood Estates Subdivisions, $372,000.

Tex., San Antonio—DWELLINGS—Thrailkill Constr. Co., 813 E. Myrtle St., 19 dwellings, Glen Oaks Parks and Sunset Hills subdivisions, $352,000; 24 dwellings, $368,110.

Wash., Spokane—SHOPPING CENTER—James S. Black, W 918 Riverside, plans by Warren Heylman, W 1023 Riverside, shopping center, $500,000. Bids about Nov. 15.

▲ Wash., Spokane—RETIREMENT HOME—Spokane, Methodist & Homes, Inc., c/o Culler, Gale, Martell & Morrie, archts., Realty Bldg., 1 story, 55x324 ft. rein.-con. retirement home with 3 wings. $2,750,000. Bids about Dec. 1.

Wash., Tacoma—OFFICE—W. J. Gazecki, 7127 Interlaken Dr. S.W., 1 story office bldg. to be occupied by branch offices of five state agencies under lease. $400,000.

Wis., Prairie du Chien—SCHOOL—St. John's Catholic Congregation plans by A. F. Billmeyer & Son, 420 3 St. S., Wisconsin Rapids, 2 story, 70x170 ft. L-shaped elementary school. $350,000.

▲ Wis., Wauwatosa—RECREATION CENTER—Joseph L. Belin, 68000 N. Santa Monica Blvd., Whitfish Bay, plans by Von Grossman Archts., 5455 W. Burleigh St., Milwaukee, 1 story, 40,000 sq. ft. recreation center, 117th and W. Burleigh Sts., $1,500,000.

▲ Que., Montreal—HOSPITAL—LaSalle General Hospital, c/o. Dr. M. Lacharite, 7667 LaSalle Blvd., plans by Roux & Morin, 119 Clement St., 1 story, 60,000 sq. ft. 130 bed hospital, Champlain Blvd. $1,700,000. Jean F. Gagnon & Janos Horvath, 332 Craig St. E., consult. engrs. CD 11/4.

Sask., Melville—HOSPITAL—Order of the Sisters of St. Martha, c/o St. Peters Hospital, Melville, 3 story, 42x93 ft. St. Peters Hospital addn. $600,000.

Sask., Regina—SHOPPING CENTRE—O.K. Economy Stores Ltd., Saskatoon, shopping centre, on 2½ acre site in Northwest Regina, suburb of Rosemont. $425,000.

INDUSTRIAL BUILDINGS

Ark., Hope—FEED MILL—Cameron Feed Mills, 124 E. 5th St., Little Rock, feed mill 9.7 acre site. $300,000.

▲ Conn., Byram—BAKERY—Arnold Bakeries, Inc., 10 Traverse Ave., Port Chester, N. Y., plans by Gampoume & MacMullen, 99 Chauncy St., Boston, Mass., bakery. $2,000,000.

▲ Conn., New Haven—FACTORY—Sargent & Co., 45 Water St., plans by Douglass Orr, 111 Whitney Ave., 1 story, 400,000 sq. ft. factory, Long Wharf, $4,000,000. Pedersen & Tilney, 11 Whitney Ave., consult. engrs. CD 8/4.

Conn., Watertown—PLANT—Light Metals Coloring Co., Inc., 139 Westbury Park Rd., plant. $100,000.

D. C., Wash.—WAREHOUSE, etc.—John Gibson, c/o Vosbeck & Ward, archts., 610 Madison St., Alexandria, Va., warehouse and office building, New York Ave., near South Dakota Ave. N. E. parallel to Pennsylvania R. R. $390,000.

▲ Ill., Chicago — MERCHANT MILL — International Harvester Co., 180 N. Michigan Ave., 63,000 tons per. mo. capacity merchant mill, south of 106 St., South Chicago, $12,000,000.

Ill., Skokie—WAREHOUSE—Robinson Brothers & Co. Inc., 6101 Oakton St., plans by Herman & Salzman, 53 W. Jackson Blvd., Chicago, 1 story, 26,000 sq. ft. warehouse addn. $250,000.

▲ Md., Bladensburg—PLANT—High's Dairy Products Co., 1226 Half St. S. E., Wash., D. C., plans by Edwin Ball, 5817 Baltimore Blvd., Riverdale, processing plant Kenilworth Ave., Upshur St. to 49th Ave. Over $1,000,000. CD 5/29.

Mass., Cambridge—WAREHOUSE—Harvey Radio Laboratories, Inc., 447 Concord Ave., plans by William L. Galvin, 388 Brattle St., warehouse, Concord Ave. $200,000. Constr. 1958.

▲ N. C., Charlotte—TRUCK FREIGHT TERMINAL—Akers Motor Lines, Gastonia, plans by James C. Wise, 873 Spring St. N.W., Atlanta, Ga., truck freight terminal. $1,000,000.

▲ Okla., Tulsa—PLANT—Dewey Portland Cement Co., 4646 Roanoke Parkway, Kansas City, Mo., cement-producing plant on 1,500 acre site four miles east of here. $12,000,000.

S. C., Anderson—GARAGE—Gallant-Belk Co., Anderson, auto parking garage, $200,000.

(Continued on page 169)

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(Continued from page 166)

Tex., Houston—PLANT—Scholz Homes, Inc., Frank H. Marsters, 9011 Silver Spring St., house mfg. plant, $300,000.

Tex., Houston—WAREHOUSING, etc.—Texas Office Supply Co., 111 Main St., warehousing and display rooms. $200,000.

Wash., Mountlake Terrace—PLANT—Marine Fiber-Glass & Plastics, Inc., 2901 Blakely St., Seattle, 40,000 sq. ft. plastics mfg. plant. $150,000. Work to start early next year.

▲ Wash., Seattle—PARKING GARAGE—Sierra Corp., (Sub. Utah Constr. Co.), 144 E. Broadway, Salt Lake City, Utah, plans by G. A. Applegarth, 1045 Sansome St., San Francisco, Calif., 10-level parking garage (Bon Marche Terminal), 3 Ave. and Pine St., $3,000,000, Work to start by Jan. 1.

Ont., London—FACTORY—Berlou of Canada, 2 Langarth St., two brick, concrete blocks, steel factory bldgs. $200,000.

Ont., Toronto—FACTORY—Toronto Industrial Leaseholds, 12 Sheppard St., 1 story, masonry factory bldg. south side of Evans Ave. near Kipling Ave. S. $100,000.

Ont., Toronto—FACTORY—Treewood Investments Ltd., 360 Richmond St. W., plans by Burston & Wells, 300 Prince Arthur Ave., 1 story, masonry factory bldg., Bentworth Ave. $100,000.

Que., Charlesbourg—West—FACTORY—J. M. Page & Frere, Inc., 118 St. Joseph Blvd., rebuild brick factory, $100,000.

▲ Que., Baie Comeau—GRAIN ELEVATOR—Cargill Grain Co., Ltd., 209 Grain Exchange Bldg., Winnipeg, Man., subsidiary of Cargill, Inc., Grain Exchange Bldg., Minneapolis, Minn., U. S. A. 10,000,000-15,000,000 bu. grain elevator, on north shore of St. Lawrence River, $5,000,000. CD 5/16.

UNCLASSIFIED

Ark., Little Rock—PARKS and AIRPORT—City, City Hall, $600,000 bond election Nov. 4, parks and airport.

Conn., Hartford—ICE SKATING RINK—City, City Hall, artificial ice skating rink, Colt Park, $290,000 Paul D. Bemis, 36 Pearl St., consult. engr. A. John Macchi, 57 Farmington Ave., structural engr. Winfred W. DeMay, city engr. CD 7/24/57.

▲† Conn., New London—SUBMARINE BASE FACILITIES—Dist. P. Wks. Office, 3rd Naval Dist., 90 Church St., New York, N. Y., plans by Douglas Orr, 111 Whitney Ave., New Haven, operational and training facilities, U. S. Naval Submarine Base. $2,247,000. CD 9/6.

Fla., Key West—BATHING BEACH—City, City Hall, fill work for bathing beach, $120,000.

Ga., Stone Mountain—RECREATION PARK—Stone Mountain Memorial Assn. 244 Washington St. S. W., Atlanta, recreation park, incl. parking area, picnic area, etc. Over $100,000 Robert & Co., 96 Popular St. N. W., Atlanta consult. engrs.

▲ Ill., Chicago—SWIMMING POOLS—Chicago Park Dist., 425 E. 14 St., 42 x 75 ft. rein.-con. outdoor-indoor swim pool, incl. outdoor covering structure, thermopane walls solid roof, Welles Park, 2330 W. Sunnyside Ave., $600,000. Bids about November, CD 8/6; 49 x 165 ft., rein.-con. outdoor swim pool, Lawndale Park, 32 St. and S. Keeler Ave., $175,000. Bids about October, CD 6/11/57; rein.-con. outdoor swim pool, Mann Park, 130 and S. Carondolet, $275,000, Bids about November, CD 6/11/57. Ralph H. Burke, Inc., 20 N. Wacker Dr., Zone 6, consult. engr.

Iowa—TELEPHONE LINES, etc.—Brooklyn Mutual Telephone Co., Brooklyn, 168 mi. telephone lines, etc. Poweshiek Co., Proj. Iowa 555B. $100,000.

Mississippi — SUB-STATION — Singing River Electric Power Assn., Lucedale, Miss., 3750 KVA sub-station. $350,000. CD 10/20/54.

Mo., Moberly—SWIMMING POOL—City, City Hall, swimming pool. $160,000.

▲† North Dakota—TRANSMISSION LINE—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., 105 mi. 230 kv transmission line from Fort Peck to Dawson Co. sub-station near Glendive, Dawson Co. and Shelby sub-station addns., completing Rudyard Sub-station. $2,060,000.

Okla., El Reno—RADIO STATION—Charles Cain, Sherman, Tex., radio station, $100,000.

South Carolina—TELEPHONE LINES—Farmers Telephone Co-operative, Kingstree, 37 mi. telephone lines, sys. imprvs., Sumter Co. $210,000. McCall-Thomas Eng. Co., 941 Broughton St., Orangeburg, consult. engr.

Texas—RURAL DISTRIBUTION LINES—Clifton Telephone Co., Clifton, sys. imprvs. and rural pole lines in Bosque, Coryell and Hamilton Counties, Clifton, Tex. 587C. $560,000.

† Tex., Camp Bullis—RIFLE MARKMANSHIP RANGES—4th Army Hdqrs., Fort Sam Houston, San Antonio, rifle markmanship ranges. $173,000.

▲ Utah and Idaho—HIGH VOLTAGE TRANSMISSION LINE—Utah Power & Light Co., Kearns Bldg., Salt Lake City, 120 mi. high voltage transmission line between Ogden, Utah and American Fork, Idaho, $7,000,000, ready for service in 1961.

▲ Utah—HIGH VOLTAGE TRANSMISSION LINE—Utah Power & Light Co., Kearns Bldg., Salt Lake City, 75 mi. high voltage transmission line from Nephi, Utah to center of the Telluride Power Co. area, Richfield, $1,900,000.

† Va., Bowling Green—BARRACKS—U. S. Eng., 1st and Douglas Sts. N.W., Wash., D. C., plans by Spector & Montgomery, 207 W. Broad St., Falls Church, constr. EM Barracks, A. P. Hill Military Reservation. $100,000-$500,000. CD 6/18, under LB.

† Va., Quantico—RADAR TOWER, etc.—U. S. Eng., 1st and Douglas Sts. N.W., Wash., D. C., radar tower and utilities, Marine Corps School. Under $100,000. CD 9/18/57, under Public Bldgs.

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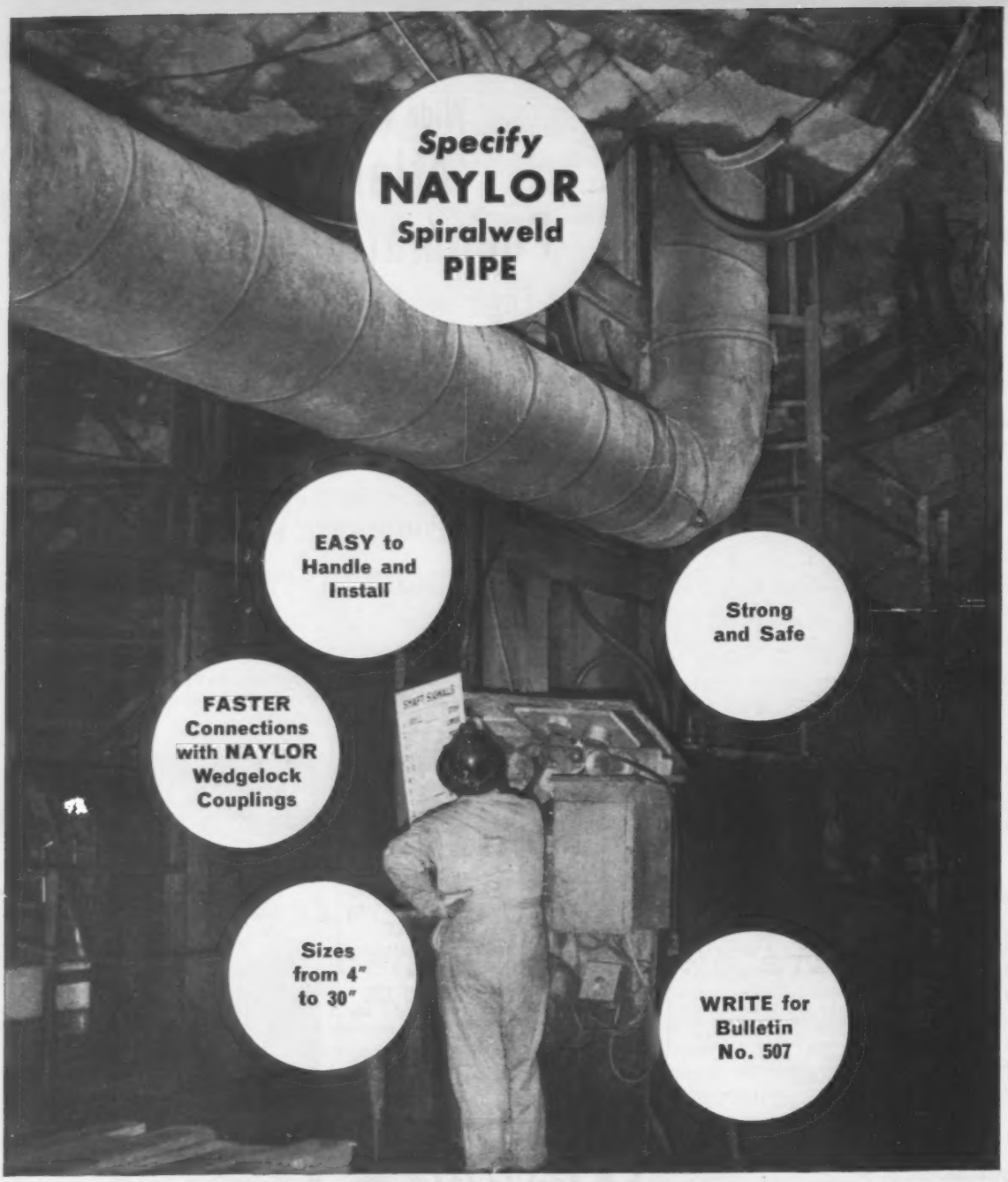

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Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

STREETS AND ROADS

October 21 Massachusetts October 27 Connecticut

BUILDINGS—BA

Mass., Lynnfield—SCHOOL—BA 10/28—Town, Elementary School Bldg. Comn., High School, Main St., Huckleberry Hill Elementary School, off Summer St. $650,000. Plans deposit $50. Rich & Tucker Assoc., 45 Newbury St., Boston, archts. CD 7/8, under LB.

▲ **Conn., Norwalk**—SCHOOL—BA 10/21—Town, City Clerk, City Hall, South Norwalk, Cranbury and Fox Run Elementary Schools. Bidders may submit proposals for a single project and a combined bid for both projects. $1,400,000. Plans deposit $40. Gilroy & Gaydosh, 64 Wall St., archts. Paul D. Harrigan, 909 Whalley Ave., New Haven, engr. CD 8/6.

▲ **R. I., Johnston** — SCHOOL — BA 10/23 — Town, 80 Greenville Ave., Central Junior High School. $1,000,000. Plans deposit $200. Joseph M. Mosher & Sons, Inc., 77 Washington St., Providence, archts. CD 5/12.

▲ **Mass., Newton**—SCHOOL—BA 10/30—City, Purchasing Agent, City Hall, South Side High School, Oak Hill. $3,000,000. Plans deposit $200. Korslund, Le-Normand & Quann, Inc., 506 Washington St., Norwood, archt. CD 8/20.

BUILDINGS—SLC

▲ **Mass., Roxbury**—RESEARCH LABORATORY, etc.—Boston Lying-In Hospital, 212 Longwood Ave., soon lets contract, research laboratory, kitchen and cafeteria, Longwood Ave. $1,000,000. CD 10/1.

HEAVY CONSTRUCTION—LB & CA

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, Bids opened 10/7, **Campanella & Cardi Constr. Co.**, 780 Jefferson Blvd., Warwick, R. I., LB $831,962, est. $1,069,610, hy. and bridge constr. Interstate Rte. 95E, FA Proj. No. 1-95E-3(2), Seekonk. CD 9/25.

BUILDINGS—LB & CA

C. A. Batson Co., 26 Arlington St., Brockton, Mass., CA $729,111, est. $700,000, SA 667-2, HOUSING for the AGED, Malvern Ave., BROCKTON, MASS. City Housing Auth., 15 Hill St., Brockton, Mass. Bids Sept. 30. CD 9/17.

E. J. Pinney Co., Inc., 220 Dwight St., Springfield, Mass., LB $520,895, est. $500,000. Housing & Home Finance Agency. Proj. Mass. 58-C-607-A8, ELEMENTARY SCHOOL, LUDLOW, MASS. Town, School Dpt., 53 Chestnut St., Ludlow, Mass. Bids Oct. 2. CD 9/17.

H. U. Bail & Sons, Inc., 9 Franklin St., Southbridge, Mass., LB $499,000, DORMITORY, PAXTON, MASS. Anne Marie College, Sunset Lane, Paxton, Mass. Albert J. Roy, 120 Front St., Worcester, Mass., archt. CD 6/23.

E. J. Benes & Co., Inc., 3649 Lee Rd., Sharon Heights, O., CA Est. $500,000, PARADISE SHOPPING CENTER, Paradise Rd. and Salem St., SWAMPSCOTT, MASS. Pine Realty Trust, 393 D St., South Boston, Mass. David J. Abrahams & Assoc., 651 Boylston St., Boston, Mass., archts. CD 6/5.

Philip Ireland, 55 Wayland St., Hartford, Conn., Owner Builds, $455,700, 30 HOUSES, "Oak Hill Estates", EAST HARTFORD, CONN.

Conyers Constr. Co., Inc., 21 Tolland Tpk., Manchester, Conn., LB $491,000 (6 bidders) ELEMENTARY SCHOOL, Lake St., ROCKVILLE, CONN. Town of Vernon, School Bldg. Comn., Park St., Rockville, Conn. Bids Oct. 3. CD 9/10.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

October 31 Pennsylvania

STREETS AND ROADS

October 21 Maryland October 28 New Jersey

October 31 Pennsylvania

▲ **N. J., South Plainfield**—BA 10/29—Borough of South Plainfield, New Jersey Sewerage Auth., Henry V. Decker, chn., Borough Hall, 119 Hamilton Blvd., sewerage sys. and appurtenances, Contr. 2, North Central Section; Contr. 3, Northwest Section; Contr. 4, Central Section; Contr. 5, Northeast Section; Contr. 6, Sewage Pumping Sections; Contr. 6E, Electrical Work. Plans deposit $50. Bowe, Albertson & Assocs., 75 West St., New York, N. Y., engrs. CD 5/24/57.

BUILDINGS—BA

▲ **Md., Marlboro**—SCHOOL—BA 10/27—Prince George's Co. Bd. Educ., Marlboro, Glendale High School, Glendale. $1,600,000. Plans deposit $60. Paul H. Kea, 5109 Baltimore Ave., Hyattsville, archt. CD 1/9.

▲ **N. Y., New Rochelle**—ADMINISTRATION—BA 10/30—Iona College, 715 North Ave., administration bldg. $1,000,000. Eggers & Higgins, 100 E. 42 St., New York, Zone 17, archts. CD 2/13.

Pa., Cambridge Springs—SCHOOL—BA 11/6—Pa. Pub. School Bldg. Auth., 101 S. 25 St., Harrisburg, elementary school for Cambridge Springs Joint School Dist., Proj. 810-643, $693,000. Plans deposit $25. Kling & Frost, 661 Wick Ave., Youngstown, O., archts. CD 5/2.

▲ **Pa., Shippensburg**—SCHOOLS—BA 11/18—Pa. Public School Bldg. Auth., 101 S. 25 St., Harrisburg, two elementary schools for Shippensburg Area Joint School Dist. $595,200 each. Plans deposit $25 each. Hunter, Campbell & Rea, 3601 Fifth Ave., Altoona, archts. CD 1/9.

▲ **Pa., Pottstown**—SCHOOL—BA 11/19—Pottstown, Pa. School Dist., constr. Senior High School Bldg. $3,000,000. Plans deposit $100 general constr., plumbing, heating and electrical work; $20 other contracts. Sanders & Thomas Assoc., Security Trust Bldg., archts.-engrs. CD 4/24.

BUILDINGS—SLC

▲ **N. J., Atlantic City**—MOTEL, etc.—Brighton Hotel, c/o Brooks & Brooks, archts., 1616 Pacific Ave., soon lets contract, 288 unit motel, incl. restaurant, snack bar, swimming pool, and ice skating rink, $1,500,000. CD 9/8.

Pa., Phila.—MOTEL, etc.—Carroll & Cutler, Inc., Marlyn Hotel, 40th and Walnut Sts., soon lets contract 90 unit motel addn. and also swimming pool. $750,000. Beryl Price, 1911 Pine St., archt. CD 3/9/55.

HEAVY CONSTRUCTION—LB & CA

▲ **C. J. Langenfelder & Son**, 8427 Pulaski Hy., Baltimore, Md., CA Est. $1,043,623, runway extension, AMB 1-C3-1sb, ATLANTIC CITY, N. J. Airways Modernization Bd., 7th and D Sts. S.W., Wash., D. C. CD 9/25, under LB.

Lehigh Foundations, Dresher, Pa. LB $745,025, storm drain, Rowan Ave., etc., TRENTON, N. J. Hamilton Twp. Comn., 2090 Greenwood Ave., Trenton, N. J. Philip S. May, c/o owner, twp. engr. CD 10/18/56.

▲ **PENNSYLVANIA**—Pa. Hy. & Bridge Auth., 506 North Office Bldg., Harrisburg,

Gasparini Excavating Co., Inc., 1439 Main St., Peckville, Pa. CA $2,228,794, 19,330 ft. divided hy. c. conc., 24 ft. wide each side 60 ft. divisor, 5 bridges, Section Scranton-Binghamton Thruway, (Proj. 819-1) FAI, Scott, Benton and Greenfield Twps., Lackawanna Co. Bids Aug. 29. CD 9/3, under LB.

Driscoll Constr. Co., 1121 Frankfort Ave., Phila. 25, Pa., CA $862,967, Contr. 464, sanitary sewers, BALTIMORE, MD. City, Bureau Sewers, 312 Municipal Bldg., Baltimore 2, Md. CD 9/25, under LB.

BUILDINGS—LB & CA

Woodcliff Park Homes, c/o Jacob Ilowite Assocs., 89-31 161 St., Jamaica, N. Y., Owner Builds, $400,000 (2nd Section) 25 HOUSES, Haypath Rd. east of Plainview Rd., BETHPAGE, N. Y.

▲ **Valmont Homes**, c/o Butterly & Green, Inc., 168-25 Hillside Ave., Jamaica, N. Y., Owner Builds, $2,000,000, 160 HOUSES, on 40-acre tract, Jericho Turnpike, east of Larkfield Rd., COMMACK, N. Y.

Radcliff Manor Homes, c/o Lane Realty Co., 170-40 Queens Blvd., Forest Hills, N. Y., Owner Builds, $480,000, 40 HOUSES, Sunrise Highway, ISLIP, N. Y.

Calvert Manor Homes, c/o Orlando Capobianco, 88 Parkview Dr., Searingtown, N. Y., Owner Builds, $425,000, 25 HOUSES, Minetts Hill Rd. south of Northern State Parkway, PLAINVIEW, N. Y.

Rosemear Gardens Homes, c/o Mortensen & Kelly, 241-30 So. Conduit Ave., Rosedale, N. Y., Owner Builds, $425,000, 15 HOUSES, Francis Lewis Blvd. and 256th St., ROSEDALE, N. Y.

Robert Scarborough, Haddonfield, N. J., Separate contracts, $400,000, RESIDENTIAL DEVELOPMENT (20), Kings Hy., ERLTON, N. J. Lester Weckesser, Erlton, N. J., archt.

L. F. Driscoll Co., 32 W. Coulter St., Phila., Pa. LB $609,600, CHERRY HILL INN addn., MERCHANTVILLE, N. J. Cherry Hill Enterprises, State Hy. No. 38, Merchantville, N. J. CD 9/8.

Continental Steel Service Co., 2210 S. 15 St., Phila., Pa., CA $420,000, RESIDENTIAL DEVELOPMENT (20), Nasuti Ave., MILLVILLE, N. J. Leon Hertz, 9100 Atlantic Ave., Atlantic City, N. J.

Carlisle Heights, 518 Landis Ave., Vineland, N. J., Separate Contracts, $400,000, RESIDENTIAL DEVELOPMENT (23), Carlisle Dr., VINELAND, N. J. John A. Fletcher, Vineland, N. J., archt.

▲ **John McShain, Inc.**, 17th and Spring Garden Sts., Phila., Pa., CA $3,500,000, OFFICE BLDG., Belmont and City Line Aves., BALA CYNWYD, PA. Beverly Building Corp., c/o contractor. McCormick-Taylor Assocs., Suburban Station Bldg., Phila., Pa., engrs. Aaron Colish, 117 S. 17 St., Phila., Pa., archt. CD 10/27/55.

▲ **Arthur W. Binns**, 2221 Chestnut St., Phila., Pa., Separate Contracts, $3,000,000, RESIDENTIAL DEVELOPMENT, Diamond Rock Hill Section, BERWYN, PA.

Ritter Bros., Inc., 1511 N. Cameron St., Harrisburg, Pa., CA $500,000, DEPARTMENT STORE, CAMP HILL, PA. Morris A. Kravitz, Inc., 225 S. 15 St., Phila., Pa., Neff & Evantash, 1520 Locust St., Phila., Pa., archts.-engrs., CD 6/4;

Spera Constr. Co., Box 668, Harrisburg, Pa., CA $344,000, SUPERMARKET, (Camp Hill, Pa.).

▲ **Reisinger Brothers**, East North St. exten. Carlisle, Pa., CA $1,268,000, general contract HIGH SCHOOL for Greencastle-Antrim Joint School Dist. on Ridge Ave., GREENCASTLE, PA. Greencastle-Antrim Jt. School Auth., High School Bldg., Greencastle, Pa. Bids Aug. 13, awarded CD 8/19, under LB.

M. & L. Constr. Co. Inc., 108 S 40th St., Phila., Pa., CA $993,333, general contracts Junior Senior HIGH SCHOOL, GREEN RIDGE, PA. Pen Delco Jt. School Bd., Green Ridge, Pa. Bids Sept. 18, CD 9/29, under LB.

▲ **Stoffler & Tillotson**, 2043 Eastburn Ave., Phila., Pa. LB $1,014,000. Norris Low Cost HOUSING Exten. (101 units), PHILA., PA. Phila. Pa. Housing Auth., 42 S. 15th St., Phila., Pa. Bids Oct. 1. CD 9/24.

Rosemont Constr. Co., c/o owner. CA $750,000. OFFICE BUILDING, RADNOR, PA. Radnor Shopping Center, c/o Matthew Weinstein, 1030 Lancaster Ave., Rosemont, Pa. Wise, Burke & Scipione, 1030 Lancaster Ave., Rosemont, Pa., archts.

▲ **Cafritz Co.**, 1404 K St. N. W., Wash., D. C. Owner Builds. $5,000,000, 12 story OFFICE BUILDING, 1725 K St. N. W. (North side of K, west of Connecticut Ave., adjoining office bldg. now under construction) WASH., D. C. LeRoy Werner, 1404 K St. N. W., Wash., D. C., archt. CD 7/15.

Merando, Inc., 4098 Minnesota Ave. N.E., Wash., D. C. CA $767,527 constr. Ruth K. Webb ELEMENTARY SCHOOL, Mt. Olivert Rd. and Holbrook St. N.E., WASH., D. C. D. C. Govt., Dpt. Bldgs. & Grounds, 499 Pa. Ave. N.W., Wash., D. C. Bids Sept. 9. CD 9/15, under LB.

Harry S. Lynch Co., 715 Tatnall St., Wilmington Del., LB $407,700 SCHOOL addn., alterations, WILMINGTON, DEL. Richardson Park School Dist., Richardson Park, Del. Bids Sept. 25, CD 9/17.

SOUTH

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

October 21 North Carolina, Virginia

October 22 Louisiana

STREETS AND ROADS

October 21 North Carolina, Virginia

October 22 Louisiana October 31 Kentucky

† **La., Alexandria**—AIRCRAFT WASHRACK—BA 10/28—U.S. Eng., P.O. Box 867, Little Rock, Ark., aircraft washrack for Control Center Bldg., Alexandria Air Force Base, Eng-03-050-59-20. $100,000-$500,000. CD 2/5.

▲† **Kentucky and Tennessee**—BA 11/6—U.S. Eng., 306 Federal Office Bldg., Nashville, Tenn., locks for Barkley Lock and Dam, 3 mi. above mouth of Cumberland River, Lyon and Livingston Counties, CIVENG-40-058-59-3. Over $15,000,000. Extended date. CD 9/23.

BUILDINGS—BA

▲ **Fla., Tampa**—ADMINISTRATION OFFICE—BA 10/28—State Bd. Control, J. B. Culpepper, Tallahassee, Dr. John S. Allen, pres. University of South Fla., Courthouse, Tampa, 2 story, 164 x 226 ft. tile, brick Temple Terrace (classroom admin. office bldg.) State University. Plans deposit $50. Pullara, Bowen & Watson, 2910 Grand Central Ave., archts. Guy C. Fulton, Bldg. "E," University of Fla., Gainesville, assoc. archt. CD 5/29.

▲ **Fla., Miami**—STATE OFFICE—BA 11/12—State Bd Comrs. of State Institutions, Tallahassee, state office bldg., west side of 12 Ave. Plans deposit $35. Walter Butler Co., Vernon D. Lamp, 2005 Ponce DeLeon Blvd., Coral Gables, archt. CD 9/5/57.

▲ **Fla., Miami**—JAIL and PUBLIC SAFETY—BA 12/2—Dade Co. Bd. Comrs., 10th Floor, Courthouse, 1 and 10 story, 192 x 242 RIC concrete piling jail; 5 story, 62 x 241 RIC safety bldg.; 1 story, 40 x 78 RIC boiler room, heating, ventilating, air-conditioned, vicinity of NW 12 Ave. and 17 St. Plans deposit $200. Coda Assocs., 206 Roper Bldg., archt. R. I. Duffer & Assocs., 3356 Virginia St., mech. engrs. L. B. Tayler, Du Pont Plaza Bldg., consult. engr. CD 6/18/57.

HEAVY CONSTRUCTION—LB & CA

▲† **C. J. Langefelder & Son, Inc.**, 8427 Pulaski Hy., Baltimore 24, Md. LB $5,847,645 (13 bidders) grading, drainage and related work Washington International Airport, CHANTILLY, VA. Civil Aeronautics Admin., Room 2615 T-5 Bldg., 16th and Constitution Ave. N.W., Wash., D. C. Bids Sept. 24. CD 9/8.

▲ **WEST VIRGINIA**—State Road Comn., Charleston, Zone 5, Bids opened 10/7,

W. Va.—**J. F. Allen Co.**, Box 49, Clarksburg, W. Va., LB $1,148,023, traf. bd. base course and b. conc. bottom and wearing courses 4.68 mi. Philippi-Belington Rd., U. S. Rte. 250, Proj. F-117 (8), Barbour Co.;

W. Va.—**V. P. Stickley**, Burlington, W. Va., and **J. M. Francesa & Co.**, Fayetteville, W. Va., LB $544,742, c. conc. 0.773 mi. Keyser-U. S. 50 Road, U. S. Rte. 220, Proj. F-480 (2), Mineral Co. CD 9/26.

▲ **City Comn.**, City Hall, Dinner Key, rejected bids Sept. 3, incinerator, Coconut Grove, MIAMI, FLA. LB $1,590,041. CD 9/9, under LB.

City Comn., Municipal Justice Bldg., 1145 NW 11 St., rejected bids Oct. 1, North Belle Meade Sanitary

Sewer imprvs., SR-349 S & C, MIAMI, FLA. LB $431,218. CD 10/7, under LB.

BUILDINGS—LB & CA

† **Goode Constr. Corp.**, 200 Builders Bldg., Charlotte, N. C., LB $507,454 (6 bidders), POST OFFICE and COURT HOUSE, ABINGDON, VA. General Services Admin., 19th and F Sts. N.W., Wash., D. C. Bids Oct. 7. CD 9/10.

Metropolitan Properties, Keith Jones, pres., Ocean Plaza Hotel, Myrtle Beach, S. C. Separate Contracts. $475,000, MOTOR HOTEL, MYRTLE BEACH, S. C.

W. M. Fine, Contr., Spartanburg, S. C., LB $520,355, CITY JAIL renovation, addns., SPARTANBURG, S. C. City, City Hall, Spartanburg, S. C. David Cecil, Spartanburg, S. C., archt. CD 10/25/56.

Pearce & Gresham, Box 1527, Decatur, Ga., CA $375,000. BANK, DECATUR, GA. First National Bank, Decatur, Ga. Awarded Oct. 4. CD 7/21.

Osborne & Assocs., 91 Terrace and Starkey Rd., Largo, Fla., Separate Contracts, $800,000, 90 RESIDENCES, 2nd and 3rd addns. to Largo-Clearwater Subdivision, LARGO, FLA.

Kenad Constr. Co., 827 E. 25 St., Hialeah, Fla., LB $400,000, 46 one story, 31x48 CB-S RESIDENCES, MIAMI, FLA. Adkin Co., Inc., c/o general contractor. R. J. Schneider, 1431 Flamingo Way, Hialeah, Fla., archt.

Neil Schiff, 1800 SW 87 Ave., Miami, Fla., LB $400,000. 42 one story, 26x51 CB-S RESIDENCES, 19 St. and SW 89 Place, Coral Park Estates, MIAMI, FLA. Loriland Inc., c/o general contractor. Wm. C. Kreidt, 127 South River Dr., Miami, Fla., archt.

▲ **John B. Orr, Inc.**, 45 NW 54 St., Miami, Fla., LB $1,673,000. North Dist. HOSPITAL, Sample Rd., POMPANO BEACH, FLA. Broward Co. Bd. of Hospital Comrs., 1612 SE 1st Ave., Fort Lauderdale, Fla. Bids Oct. 2. CD 9/23.

MIDDLE WEST

HEAVY CONSTRUCTION—LB & CA

▲ **OHIO**—Dpt. Hys., Columbus, Bids opened 9/30,

O.—**C. F. Replogle Co.**, 122½ N. Court St., Circleville, O., LB $431,508, est. $437,700 (5 bidders), Type T-71 and T-35 2.555 mi. USR 33 (10.88-12.95) DU-376 (4) DF-376 (5) City of Lancaster, Fairfield Co.; LB $2,974,183, est. $3,207,500 (7 bidders), Type T-71 and structures 6.679 mi. USR 35-0.00, (34.38-35.11) F-606 (9) Jackson and Ross Counties;

O.—**C. E. Edgington & Son**, 913 S. Main St., Findlay, O. LB $603,281, est. $705,800 (19 bidders), Type T-35 on B-119 and structures 1.987 mi. SR 39 and 95-2.90-2.37, S-SG-501 (7) S-SG-1266 (1) Village of Perrysville, Ashland Co.;

O.—**The Horvitz Co.**, 4375 E. 146 St., Cleveland, O. LB $547,536, est. $721,400 (4 bidders), Type T-35 8.698 mi. SR 10 (0.00-8.64) DR-308 (3), cities of North Olmsted and Fairview Park, Cuyahoga Co.;

O.—**Foley Constr. Co.**, 5050 Orchard St., Cincinnati, O. LB $1,048,427, est. $1,216,000 (5 bidders), Type T-71 and structures 0.758 mi. USR 50 (29.83-30.33) U-582 (11), Village of Fairfax, Hamilton Co.;

O.—**Don S. Cisle, Contractor, Inc.**, 808 1st National Bank Bldg., Hamilton O., LB $182,892, est. $200,200 (4 bidders), Type T-35 on B-119 and structure 1.303 mi. SR 725-1.08, S-28 (4), Preble Co.;

O.—**A. J. Ronyak, Inc.**, Box 277, Burton, O., LB $161,542, est. $209,300 (3 bidders), Type T-35, 7.04 mi. SR 283 (0.00) (6.94), Cities of Willowick, Eastlake and Willoughby, Villages of Lakeline and Timberlake, Lake Co.;

O.—**Northwood Stone & Asphalt Co.**, R. F. D. No. 2, Belle Center, O. LB $98,911, est. $130,600 (3 bidders), Type T-35 11.81 mi. USR 33-19.50, Village of Zanesfield Logan Co.;

O.—**Hinton Constr. Co.**, 638 N. Main St., Celina, O. LB $307,961, est. $319,800 (3 bidders), Type T-35 1.246 mi. SR 29 (11.48-11.49) (12.90), City of Celina, Mercer Co. CD 9/10.

▲ **INDIANA**—State Hy. Comn., John Peters, chn., State House Annex, Indianapolis, Zone 4,

Ind.—**Rieth-Riley Constr.**, Goshen, Ind., CA $2,027,768, est. $2,191,512, c. conc. 3.941 mi. US 31, Contr. R-4421, I-03-2(8) 9-23-58, Jackson Co.;

Ind.—**McMahan Ill. Corp.**, Rochester, Ind., CA $598,642, est. $625,996, bit. pavement with aggr. base 5.871 mi. SR 114, Contr. R-4467 S-799(2) 9-23-58, Fulton Co. Bids June 25, CD 7/2, under LB.

▲ **INDIANA**—State Hy. Comn., John Peters, chn., State House Annex, Indianapolis, Zone 4,

Robert H. King, Contractor, Inc., and Robert H. King, Danville, Ind., CA $1,804,935, est. $2,051,032, 10 continuous steel plate girder continuous steel beam and steel beam spans over Wabash River, Structure U-829(4) 231-KK-4000, 4 continuous rein.-con. slab spans over S. R. 43, Structure U-829(4) 231-KK-4001, Contr. 4441, Tippecanoe Co. Bids Aug. 26, CD 9/2, under LB.

▲ **INDIANA**—State Hy. Dpt., John Peters, chn., State House Annex, Indianapolis,

Berns Constr. Co., 312 E. Washington St., Indianapolis, Ind., CA $1,859,611, est. $2,051,262, rein.-con. paving 4.087 mi. U. S. 52, Contr. R-4422, I-03-4(8) 9-17-58, Boone Co., Bids May 27, CD 6/5, under LB.

▲† **Huber, Hunt, & Nichols, Inc.**, P. O. Box 128, Indianapolis 6, Ind., CA $1,337,000, four 3 story, approx. 40 x 205 ft., rein.-con. frame, rectangular airmen's dormitories, Air Force Base, Bunker Hill, Spec. No. 14775/58, PERU, IND. Dist. P. Wks. Office, Bldg. 1-A, Great Lakes, Ill., Bids Sept. 4, awarded Sept. 30. CD 8/18.

▲ **ILLINOIS**—Dpt. P. Wks. & Bldgs., Div. Hys., Centennial Bldg., Springfield,

Ill.—**Sankey Brothers, Inc.**, Illinois Bldg., Springfield, Ill. CA $518,401, resurf. 5.03 mi. Ill. 29 from jct. 123 to Greenview, Menard Co.;

Ill.—**General Paving Co., Inc.**, 30 E. John St., Champaign, Ill. CA $500,597, wid'n. 13.85 mi. U. S. 36 between LaPlace and Atwood, Pratt-Moultrie-Douglas Counties, Bids Sept. 12. CD 9/17, under LB

▲ **WISCONSIN**—State Hy. Comn., State Office Bldg., Madison. Bids opened 10/2,

Wis.—**Shappert Engineering Co.**, Belvidere, Ill., LB $142,422, Structures B-53-52, B-53-53 and B 52.54 S.S.H. 14-Illinois State Line (S.T.H. 15-Illinois State Line Section) Rd., Interstate Hy. 90, Contr 2, Proj I-90-3(11)185, Rock Co;

Wis.—**Speedway Constr. Co.**, 6001 N. 91 St., Milwaukee, Wisc., LB $244,092, (11 bidders), Structure B-40-53 and approaches Northwest Expressway (West Vliet St. under-pass), Contr. 1, Proj. DU 03-57, Milwaukee Co.;

Wis.—**The Drumi Co., Inc.**, 1788 N. Water St., Milwaukee, Wis., LB $679,093, Structures B-40-66 and B-40-67 North-South Expressway (Milwaukee River Bridges), Contr. 1, Proj. DU 077-1(15), Milwaukee Co.;

Wis.—**Wunderlich Bros.**, Appleton, Wis., LB $1,004,317, (9 bidders), grade, base, Structure B-44-16 and concrete paving 0.539 mi. John Street Bridge and approaches, City of Appleton, County Trunk Hy. 7, Contr. 1, Proj. T 0396(1), Outagamie Co.;

Wis.—**H. F. Radant, Inc.**, 3110 Locust Lane, Eau Claire, Wis., LB $117,579, (4 bidders), grade, subbase, base and Structures B-55-51 and 52, 1.123 mi. Willow River Bridges and approaches, C.T. Hys. A and AA, Contr. 1, Projs. DS 0553(7) and DS 1297(2), St. Croix Co. CD 9/12.

▲ **WISCONSIN**—State Hy. Comn., State Office Bldg., Madison,

Wis.—**Wunderlich Brothers & Wieseler Constr., Inc.**, 201 E. College Ave., Appleton, Wis., CA $1,001,728, grade, base, Structure B-44-16 and concrete paving 0.539 mi. John Street Bridge and approaches, City of Appleton, C.T.H. Z, Contr. 1, Proj. T 0396 (1), Outagamie Co.;

Wis.—**The Drumi Co., Inc.**, 1788 N. Water St., Milwaukee 2, Wis., CA $678,093, Structures B-40-66 and B-40-67, North-South Expressway, Milwaukee River Bridges, Contr. 1, Proj. DU 077-1 (15), Milwaukee Co. Bids Oct. 2. CD 10/8, under LB.

WISCONSIN—State Hy. Comn., State Office Bldg., Madison,

Kramp Constr. Co., Inc., 2765 S. 27 St., Milwaukee 15, Wis., CA $560,156, grade, base and Structures B-67-37, B-67-38 and C 67-18, 9.095 mi. North Prairie-Waukesha Rd., S.T.H. 59, Contr. 1, Proj. DF 063-1 (11), Waukesha Co. Bids Oct. 2. CD 10/8, under LB.

BUILDINGS—LB & CA

Erik A. Borg Co., 6649 N. Ridge Ave., Chicago, Ill. CA $750,000, 2 story, 36,000 sq. ft. STORAGE WAREHOUSE and 27,000 sq. ft. ROTO WAREHOUSE, CHICAGO, ILL R. R. Donnelley & Sons Co., 350 E. Cermak Rd., Chicago Ill. Lundstrum & Skubic, 53 W. Jackson Blvd., Chicago, Ill. ,archts.

Fred W. Skirrow & Co., 2040 W. Washington Blvd, Chicago, Ill., CA $450,000, general contract 1 story, 33,000 sq. ft. brick BOWLING ALLEY, 1601 Sibley Blvd., DOLTON, ILL. Owner, c/o Arthur J. Bernstein, 100 W. Monroe St., Chicago, Ill.

▲ **F. A. Wilhelm Co., Inc.**, Southeastern Ave., Indianapolis, Ind., CA Est. $2,000,000, 4 story, 190 x 290 ft. rein.-con. masonry CONVENT, ST. MARY-OF-THE-WOODS, IND. Mother General, Sisters of Providence, St. Mary-of-the-Woods, Ind. Bids Sept. 15, CD 9/8.

Mayfair Constr. Co., 5660 N. Kedzie Ave., Chicago, Ill., LB $546,080, 1 and 2 story, 180 x 289 ft. L-shaped Crerar-King SCHOOL, CHICAGO, ILL. Bd. Educ. City of Chicago, 228 N. LaSalle St., Chicago, Ill. Bids Oct. 6. CD 9/18.

Illinois Hydraulic Constr. Co., 20 N. Crystal St. Elgin, Ill. LB $500,000, 2 story, brick, granite, face brick, aluminum store front SAVINGS and LOAN BLDG., ELGIN, ILL. First Federal Savings & Loan Assn., 14 E. Chicago Ave., Elgin, Ill. Bids Oct. 2. CD 9/19.

J. Imhoff Constr. Co., Hy. 30, Madison, Wis., CA Est. $650,000, MOTEL, MADISON, WIS. Holiday Inn, 2 Craig Ave., Madison, Wis. Klund & Assocs., Box 2175, Madison, Wis., archts.

Kileen & Wille Constr. Co., 1402 Poplar Ave., Superior, Wis., CA $689,660, general contract PHYSICAL EDUCATION and HEALTH BLDG., RIVER FALLS, WIS. Bd. Regents of State Colleges, Madison, Wis. Bids June 19, awarded Sept. CD 6/26, under LB.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

October 16 Kansas
October 22 Montana
October 24 North Dakota
October 28 Wisconsin-Minnesota

STREETS AND ROADS

16 Kansas
October 22 Montana
October 24 North Dakota

Minn., Minneapolis—HANGAR, etc.—BA 10/28—Minneapolis-St. Paul Metropolitan Airports Comn., 2429 University Ave., St. Paul, furnish, erect protected metal siding and roofing and erection for Northwest Airlines main base, incl. hangar, engine bldg., shops, and store bldg., boiler plant and engine test bldg., at Wold-Chamberlain Field (part of constr. program now under way). $850,000. Plans deposit $100. W. Butler Co., 1300 Minnesota Bldg., St. Paul, archt. CD 6/13/55.

▲ **Colo., Denver**—BA 10/30—Bd. Water Comrs., 144 West Colfax Ave., two 15 m.g. clear water storage reservoirs, (Hillcrest reservoirs) $1,250,000. John Burgess, c/o Bd. Water Comrs., ch. engr. CD 8/12/55.

▲† **Oklahoma**—BA 11/13—U. S. Eng., Box 61, Tulsa, grade, drain 1.5 mi. raising U. S. 60 across Verdigris Valley for the Oologah Reservoir. $2,000,000. CD 9/19.

BUILDINGS—BA

Minn., LeSueur—HOSPITAL—BA 10/21—Minnesota Valley Memorial Hospital, LeSueur, 44-bed municipal hospital. $445,000. Extended date. CD 9/17.

▲ **Colo., Boulder**—HOME FAR AGED—BA 10/31—Rocky Mountain Methodist Homes, 2100 S. Josephine, Denver, 6 story, 118,020 sq. ft. Methodist Home for Aged. $1,912,000. Stanford W. Griffith, 1 St. Ave., S. and 10th St., Fort Dodge, Iowa, archt. CD 1/13.

▲ **Tex., Deer Park**—SCHOOL—BA 11/4—Deer Park Ind. School Dist., constr. (first unit) W. A. Carpenter Elementary School, between Center St., in Deer Park, and Red Bluff Rd., in Pasadena, just off Pasadena Blvd., $1,000,000. Emory S. White & Arne G. Engberg, 2017 S. Shepherd Dr., Houston, archts. Walter P. Moore, 2 Pinedale St., Houston, and Raymond L. Jenkins, 4316 Blossom St., Houston, consult. engrs., CD 10/2.

▲† **Tex., El Paso**—HOUSING—BA About 11/12—U. S. Eng., Box 1538, Albuquerque, N. M., 410-unit Capehart Housing, Fort Bliss, ENG-29-005-59-7. CD 9/8.

HEAVY CONSTRUCTION—LB & CA

▲ **MINNESOTA**—State Hy. Dpt., 1246 University Ave., St. Paul, Bids opened 9/19,

W—**Hoodgman & Sons, Inc. & Alley Constr. Co., Inc.**, Box 387, Faribault, Minn. (joint venture) LB $1,123,600, grav. base road-mixed bit. base and surf. 8 mi. and bridges, Washington Co. (Correction—low bidder). CD 9/23, under LB.

▲ **A.B.C. Constr. Co.**, 4423 So. 33rd West Ave., Tulsa, Okla., LB $522,025, Div. F, South Creek Trunk Sewer; LB $390,008, Div. O, East Side Trunk and Relief Sewers, SPRINGFIELD, MO. City, Council Chambers, SPRINGFIELD, MO. Bids Sept. 25. CD 9/2;

Hamby Excavating Co., 1006 So. Ferguson, Springfield, Mo., LB $369,009, Div. L, West Creek Trunk Sewer (Springfield, Mo.).

▲† **G. E. Bass & Co.**, 2715 N. State St., Jackson, Miss., CA $2,212,033, dormitories and dining hall, Tinker Air Force Base, ENG-34-066-59-10, OKLAHOMA CITY, OKLA. U. S. Eng., Box 61, Tulsa, Okla. CD 10/8, under LB.

Motorola Communications & Electronics, Inc., 4501 W. Augusta St., Chicago, Ill., CA $450,000, 267 mi. microwave radio system, about 11 to 16 steel towers, between Dallas and Beaumont, TEXAS. Magnolia Pipeline Co., Magnolia Blvd., Dallas, Tex.

▲ **TEXAS**—State Hy. Comn., Austin,

Tex.—**Brown & Root, Inc.** and **San Jacinto Equipment Co.**, Box 3, Houston, Tex., CA $1,769,337, grade, etc., 5.315 mi. Hy. US 59, Proj. F 514(23), Harris Co.;

Tex.—**Trinity Constr. Co., Inc.**, P.O. Box 3024, Houston, Tex., CA $560,649, grade, etc., 6.321 mi. Hy. SH 288, Proj. DU 565(4) DU 393(4), DF 318(3), Harris and Fort Bend Counties. Bids Sept. 17. CD 9/29, under LB.

Utilities Eng. & Constr. Co., 1909 S. Cherokee, Denver, Colo., LB $824,433, est. over $73,000, sewage treatment plant imprvs., COLORADO SPRINGS, COLO., City, Municipal Utilities Bldg., Colorado Springs, Colo. Bids Sept. 5. CD 9/5.

BUILDINGS—LB & CA

Adolfson & Peterson, 2817 Bryant Ave. South, Minneapolis, Minn., CA $706,500, general contract STATE DPT. EMPLOYMENT SECURITY OFFICE, Second Ave. South and Third St., MINNEAPOLIS, MINN. State Dpt. Admin., Div. Procurement, 19 State Capitol, St. Paul, Minn. Bids Sept. 26. CD 10/1, under LB.

W. S. Bellows Constr. Corp., 716 N. Everton St., Houston, Tex., CA $500,000, est. $400,000, 49,000 sq. ft. masonry WAREHOUSE, HOUSTON, TEX. B. F. Goodrich (Tire) Co., 3311 Canal St., Houston, Tex. and 500 South Main, Akron, O. Bids Sept. 17. CD 9/15.

Regents of the University of Minnesota, 404 Administration Bldg., Minneapolis 14, Minn., rejected bids Sept. 11, general constr. VETERINARY DIAGNOSTIC and RESEARCH LABORATORY, and 2 ISOLATION BLDGS. on Campus, ST. PAUL, MINN. LB $419,246. Will re-advertise. CD 9/17, under LB.

▲ **Buckley Constr. Co.**, 4604 Gravois Ave., St. Louis 16, Mo., LB $868,159 (A) OUTPATIENT-CLINIC BLDG., NURSES HOME, CHAPEL, RECREATION BLDG.; LB $829,516 (B) SOLARIA addns. to clinic and hall bldgs. and addns. to Harrison and Annex bldgs. at State Hospital No. 4, FARMINGTON, MO. State Div. P. Bldgs., Chief of Planning & Constr., 100 State Capitol, Jefferson City, Mo. Bids Sept. 23. CD 9/8.

Gibson Constr. Co., 5865 Hampton Blvd., St. Louis 9, Mo., CA Est. $400,000, 3 story, 68x72 ft., 38-family APARTMENT, 7120-30 Nottingham Ave., ST. LOUIS, MO. Dave Decker, 5865 Hampton Blvd., St. Louis 9, Mo. Raymond X. Grueninger, archt., and Russell T. Stokes, engr., both 7912 Bonhomme Ave., Clayton 5, Mo.

V.G.V. Realty Co., c/o Palace Bowl, Inc., 4925 Southwest Ave., St. Louis 10, Mo., Owner Builds, BOWLING ALLEY, etc., Tesson Ferry Rd. south of Lindbergh Blvd., ST. LOUIS COUNTY, MO. Total est. over $500,000. Raymond X. Grueninger, 7912 Bonhomme Ave., Clayton 5, Mo., archt.;

Midwest Pool & Court Co., 1206 N. Rock Hill Rd., St. Louis County 24, Mo., CA swimming and wading pools (St. Louis County, Mo.).

Austin Bldg. Co., Box 1590, Dallas, Tex. LB $710,095 (Base Bid) J. L. Bates, ELECTRIC POWER STATION,

(Continued on page 174)

"Armco Drainage Structures help us speed up installation"

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(Continued from page 172)

Unit 1, MISSION, TEX. Central Power & Light Co., 120 N. Chaparral St., Corpus Christi, Tex. Bids Sept. 30. CD 9/12.

Kelley Constr. Co., Box 1183, San Angelo, Tex., CA $738,600, JUNIOR HIGH SCHOOL, SNYDER, TEX. Snyder Independent School Dist., Snyder, Tex. Bids Sept. 25. CD 9/12.

FAR WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

October 28 Idaho November 5 California

STREETS AND ROADS
November 5, 6 California

▲† California—BA 11/6—U. S. Eng., 791 S. Figueroa St., Los Angeles, constr. East Twin and Warm Creeks channel, Central Ave. to Santa Ana River, Mile 1.50 to Mile 0.29 and Central Ave. Bridge, CIVENG-04-353-59-10. $1,000,000. CD 9/23.

BUILDINGS—BA

▲† Alaska, Juneau—GYMNASIUM—BA 11/26—Alaska P. Wks., Dpt. Interior, 125 W. 3 St., 100x152 ft. gymnasium bldg. with attached 36x116 ft. shower and locker room area and 66x147 ft. auditorium, rein.-con. constr. for Juneau-Douglas High School Proj. 50-A-238. L. A. Forrest, 622 Hemlock Way, archt. CD 10/3, under LB.

BUILDINGS—SLC

Calif., Los Angeles—RESIDENCES HALLS—Occidental College, 1600 campus Rd., soon lets contract men's and women's residence halls. $880,000. Pereira & Luckman, 8534 Sunset Blvd., archts.

Wash., Walla, Walla—SCHOOL—Most Rev. B. J. Topel, Catholic Bishop of Spokane, S. 317 Howard St., Spokane, soon lets contract, 40,000 sq. ft. rein.-con. steel frame high school. $500,000. Culler, Gale, Martell & Norris, Realty Bldg., Spokane, archts. CD 4/1/57.

HEAVY CONSTRUCTION—LB & CA

† ALASKA—Bureau P. Rds., Opt. Commerce, Juneau, Manson-Osberg Constr. Co., 1132 N. 128 St., Seattle 33, Wash., CA $680,403 clearing grubbing, grading Mitkof Hy. south 6.6 mi. from Petersbury to Blind Slough Forest Hy., Proj. 7-G DS-09-37 (3). Bids Sept. 2. CD 9/10, under LB.

▲ WASHINGTON—State Hy. Comm., Ernest J. Ketcham, chn., W. A. Bugge, dir. Hys., Dpt. Hys., Olympia, Bids opened 10/7,

Wash.—L. Dickson Co., 3315 S. Pine St., Tacoma, Wash., LB $897,151, clearing, draining, grading, surf., constr. bit. surf. treatment and cement treated base, b. conc. paving and fencing 1.799 mi. Primary St. Hy. 1, S. 72 St. to S. 40 St., Tacoma, FAP No. I-5-3(33)130, Pierce Co.;

Wash.—C. E. Oneal, Inc., Ellensburg, Wash., LB $768,318, grading, surf., constr. bit. surf. treatment, fencing and steel plate girder bridge 1.921 mi. Primary St. Hy. 18, Ritzville vicinity, FAP No. I-IG-90-4(10)214, Adams Co., CD 9/24.

▲ OREGON—Hy. Comm., Hy. Bldg., Salem, Bids opened 9/30,

Ore.—Hamilton & Thoms, Box 726, Eugene, Ore. LB $641,405 (7 bidders), two undercrossings and six drainage structures, South Santiam Junction-Lane County line section, Pacific Hy., FAIP I-5-4 (23) 218, Linn Co.;

Ore.—Hannon Bros., 3525 N. Going St., Portland, Ore. LB $407,386 (7 bidders), 3 viaducts, retaining wall, overcrossing on Beaverton-Hillsdale and Pacific West Hys., FAP DUS-198 (6) and DU-203 (6), Multnomah Co.;

Ore.—Richard I. Martin Co., Box 482, Oswego, Ore. LB $92,614 (6 bidders), 236 ft. bridge, North Plains undercrossing of Sunset Hy., FAP DF-186 (18), Washington Co. CD 9/22.

▲ OREGON—Hy. Comm., Hy. Bldg., Salem, Bids opened 9/30;

Ore.—C. R. O'Neil, Rt. 2, Box 95, Cresswell, Ore. LB $279,664 (5 bidders), grading, surf. 1.8 mi. Bullards Bridge-Bandon sect. of Oregon Coast Hy., FAP DF 109 (8), Coos Co.;

Ore.—Twin City Constr. Co. & Clarence Braden, 404 N. 7 St., Pasco, Wash., LB $792,571 (7 bidders), grading, paving 10/7 mi. 2 bridges, Central Oregon Hy., FAP F-326 (6), Malheur Co.;

Ore.—Roy L. Houck & Sons, 1585 N. 20 St., Salem, Ore. LB $1,683,464 (6 bidders), paving 6.96 mi. N. Albany Junction-Lebanon Rd. section of Pacific Hy., FAIP I-5-4 (22) 228, Linn Co.;

Ore.—Roseburg Paving Co., 536 W. Maple St., Roseburg, Ore., LB $99,733 (1 bidder), grading, paving .52 mi. Garden Valley county road, FAP DUS 402 (1), Douglas Co.;

Ore.—R. & M. Constr. Co. & Ausland Constr. Co., Grants Pass, Ore., LB $754,060 (7 bidders), grade, pave, and 2 structures, Pacific & Redwood Hys. junction, FAP U-131 (19) F-127 (9), Josephine Co.;

Ore.—Dorman Constr. Co., 201 Adams Bldg., Vancouver, Wash., LB $87,008 (13 bidders), stone leveling course and oiling 9.34 mi. Bomber Range Road, FAP DS-406 (1) S-406 (2), Morrow Co.;

Ore.—J. C. Compton, Box 86, McMinnville, Ore., LB $305,388 (15 bidders), paving 15.6 mi. Big Eddy-Rufus sect. Columbia River Hy., Wasco and Sherman Counties. CD 9/22.

American Pipe & Constr. Co., 518 N. E. Columbia Blvd., Portland, Ore. LB $470,000 (1 bidder) relining water conduits, PORTLAND, ORE. City of Portland, City Hall, Portland, Ore., Bids Oct. 8.

▲ Andersen & Westfall, 3427 Northeast Halsey St., Portland, Ore. LB $6,223,746 (5 bidders) Exposition Recreation Center, Portland, Ore., Exhibition-Recreation Comm., Park Bldg., Portland, Ore. Bids Oct. 8. CD 8/21.

▲ CALIFORNIA—State Div. Hys., 120 S. Spring St., Los Angeles,

Silva & Hill Constr. Co., 1148 North San Gabriel Blvd., South San Gabriel, Calif., CA $1,086,311, grading, surf. to constr. 4.8 mi. US 60 to provide 4 lane expressway extending 4.8 mi. westerly from Jct. US 70-99, incl. 317 ft. bridge over Southern Pacific Co. railroad west of Beaumont and wid'n. bridge over San Timoteo Creek, Riverside Co., Bids Sept. 18, awarded Oct. 3, CD 9/22, under LB.

CALIFORNIA—State Div. Hys., 1120 N. St., Sacramento,

Madonna Constr. Co., P. O. Box 910, San Luis Obispo, Calif. CA, $717,087, grade, surf. 6.1 mi. U. S. Hy. 466 between State Sign Rte. 41 near Cholame and Kerh Co. line, San Luis Obispo Co. Bids Sept. 24, awarded Oct. 6. CD 9/30, under LB.

▲ CALIFORNIA—State Div. Hys., 1120 N. St., Sacramento,

Calif.—Madonna Constr. Co., P. O. Box 910, San Luis Obispo, Calif. CA $1,151,385, grade, pave 2.5 mi. freeway ramps and frontage roads and constr. several structures between Ortega Hill and Salsipuedes Overhead in Santa Barbara, Santa Barbara Co, Bids Sept. 24, OD 9/30, under LB;

Calif.—Griffith Co., 1060 S. Broadway, Los Angeles 15, Calif., CA $3,226,189, 4 lane freeway 7.7 mi. U. S. Hy. 99 from 0.4 mi. south of Clinton Ave. to just north of Herndon, incl. 7 structures Fresno and Madera Counties, Bids Sept. 24, CD 9/26, under LB.

▲ CALIFORNIA—State Div. San Francisco-Oakland Bay Toll Crossings, 151 Fremont St., San Francisco, Bids opened 9/30,

Charles L. Harney, Inc., 575 Berry St., San Francisco, Calif., LB $1,135,673 (4 bidders), approach roadways electrical facilities, constr. bridge ramps repairs, etc., Sterling St. Ramps, San Francisco Co. CD 9/3.

† H. Earl Parker, Inc., 12 and F Sts., Marysville, Calif. CA $672,732, levee constr. right bank Sacramento River at various locations between Colusa and Knights Landing, ENG-04-167-59-2, CALIFORNIA. U. S. Eng., 1209 8th St., Sacramento, Calif. Bids Sept. 4. CD 9/11, under LB.

▲† Vinnell Co., 1145 Westminster, Alhambra, Calif., U.S.A., CA $1,474,000, Petroleum Storage Facilities, at U.S. Naval Base, NBY 3389, MARIANAS ISLANDS, GUAM. Resident Officer in Charge of Constr., Bureau Yards & Docks, P.O. Box 148, San Bruno, Calif., U.S.A. Bids July 14, CD 7/23, under LB.

BUILDINGS—LB & CA

▲ Simpson Paper Co., Lowell St., Everett, Wash., Day Labor, $3,000,000, altering, remodeling PAPER PLANT, EVERETT, WASH. CD 12/6/56.

Northwest Bible College, 8 Ave. N.E. and E. 69 St., Seattle 15, Wash., Day Labor, $500,000, COLLEGE BLDGS., HOUGHTON, WASH. Bryant, Butterfield & Aehle, Sager Bldg., Everett, Wash., archts.

▲ J. H. Selien Constr. Co., 228 9 Ave. N., Seattle, Wash., CA $1,073,000, OFFICES, Missile Production Center, SEATTLE, WASH. Boeing Airplane Co., 7755 E. Marginal Way, Seattle 4, Wash. CD 9/2, under LB.

McCormack Constr. Co., S. E. 3 and Goodwin Sts., Pendleton, Ore., LB $629,980 (10 bidders) COURT HOUSE, VALE, ORE. Malheur Co., County Hall, Vale, Ore. Bids Oct. 1. CD 9/18.

Oltsman Constr. Co., 516 S. Monterey Pass Rd., Monterey Park, Calif. CA $400,000. FACTORY and OFFICE BLDG., 19615 S. Susana Rd., DOMINGUEZ, CALIF. Western Corrugated Box Co., 325 W. 8th St., Los Angeles, Calif. J. Y. Long Co., 132 9th St., Oakland, Calif., engr.

Continental Constr. Co., 4671 24 St. Rd., Sacramento, Calif., CA $927,000. CASE and CURE BLDG. and grain inspection facilities, Solid Rocket Plant, NIMBUS, CALIF. Aerojet-General Corp., 10687 Folsom St., Rancho Cordova, Calif. CD 8/27, under LB.

Quiller Constr. Co., Inc., 8374 West 3 St., Los Angeles, Calif., LB $803,800 (11 bidders), general contract 1 story, about 56,000 sq. ft. WARD BUILDING, incl. DORMITORY WING UNITS, separate exercise yards and yard facilities, Metropolitan State Hospital, State Dpt. Mental Hygiene, W. O. 3718GC-26, NORWALK, CALIF. State Div. Architecture, 1100 S. Grand Ave., Los Angeles, Calif., Bids Oct. 1, CD 9/3.

▲ The Fluor Corporation, Ltd., 2500 S. Atlantic Blvd., Los Angeles 22, Calif., CA ALKYLATION PLANT and an ISOMERIZATION PLANT, RICHMOND, CALIF. Standard Oil Co. of California, 30 Rockefeller Plaza, New York 20, N. Y.

Gordon Frazar, Box 13, Montrose, Calif., Owner Builds, $721,000, 85 stucco DWELLINGS, Brunswick, San Jicente and Colorado Aves., RIVERSIDE, CALIF.

Inland Empire Bldg., 5971 Jurupa Ave., Riverside, Calif., Owner Builds, $630,000, 70 stucco DWELLINGS, RIVERSIDE, CALIF.

South Gate Dev. Co., P. O. Box 707, Thousand Oaks, Calif., Owner Builds. $401,000. 34 stucco DWELLINGS, in Waverly Hts., No. 3 Tract, THOUSAND OAKS, CALIF.

CANADA

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

STREETS AND ROADS
October 22 Ontario

▲ **B. C., Vancouver**—BA 11/7—Greater Vancouver Water Dist., 2294 W. 10 Ave., erect dam about 90 ft. high, 800 ft. cement sect. and 700 ft. earth sect. for water supply storage, Seymour Falls, North Vancouver, $6,650,000. Plans deposit $50. Greater Vancouver Water Dist., 2294 W. 10 Ave., engr. CD 12/17/53.

BUILDINGS—BA

B. C., Victoria—HOUSING—BA 10/21—Central Mortgage & Housing Corp., 2286 W. 12 Ave., Vancouver, 37 frame housing units, Site 2, Belmont Park, $400,000. Plans deposit $100. CD 8/12/49.

Ont., Guelph—POLICE, etc.—BA 10/21—City, City Hall, 2 story, bsmnt., structural steel frame, brick block and stone walls police bldg. and court house, poured concrete fdns. $500,000. Plans deposit $100. Huget, Secord & Pagani, 69 MacDonnell St., archts.

▲ **Ont., Coburg**—ARMY CAMP FACILITIES—BA 10/28—Defence Construction (1951) Ltd., 56 Lyon St., Ottawa, combined all ranks quarters, mess and cafeteria bldg., Canadian Army Camp. $1,000,000. Plans deposit $100. Bids Sept. 9 rejected. CD 9/17, under LB.

▲ **Ont., Toronto**—HOUSING—BA 10/28—Ontario Dpt. Planning & Development, Queen's Park, Central Mortgage & Housing Corp., 650 Lawrence Ave. W. and Municipality of Metropolitan Toronto, 67 Adelaide St. E., all in Toronto, Lawrence Heights low rental housing proj., Lawrence Ave. W. between Bathurst St. and Dufferin St. $2,000,000. Plans deposit $100. Gordon S. Adamson & Assocs., 52 St. Clair Ave. E., archt. for 42 row housing units. CD 1/28/46.

BUILDINGS—SLC

Ont., Ottawa—SYNAGOGUE—Agudeth Israel Congregation, Samuel M. Burnstein, 30 Rosemont Ave., soon lets contract, Synagogue Coldrey St., $550,000. Hazelgrove, Lithwick & Lambert, 575 Laurier Ave. W., archt.

HEAVY CONSTRUCTION—LB & CA

Canadian Comstock Co. Ltd., 1415 Welch St., North Vancouver, B. C. CA **$683,000**, installing electrical services in Deas Island tunnel near Ladner, BRITISH COLUMBIA. 73 -C. Government Parliament Bldgs., Victoria, B. C.. Awarded Sept. 25. CD 8/11, under LB.

Diamond Constr. Co., 480 Union St., Fredericton, N. B. LB **$418,256** (4 bidders), wharf, landing and concrete walls, Fisheries Research Bd. of Canada, Biological Station, Charlotte Co., ST. ANDREWS, N. B. Dpt. P Wks., Hunter Bldg., Ottawa, Ont.

Robert McAlpine Ltd., 310 Victoria Ave., Montreal, Que. CA **$400,000** (16 bidders), excav., foundation, piling and fill for hangars and workshops, Montreal Airport, DORVAL, QUE. Trans-Canada Air Lines, 1080 University St., Montreal, Que. Ross, Fish, Duchesne & Barrett, 4115 Sherbrooke St. W., Montreal, Que., archt. Awarded Oct. 1. CD 1/6.

BUILDINGS—LB & CA

Coyne & Ratcliffe Constr. Co. Ltd., Coquitlam, B. C. CA **$724,066**, frame, brick, concrete JUNIOR HIGH SCHOOL, inc. 28 classrooms, gymnasium and auxiliary rooms, COQUITLAM, B. C. School Dist. No. 43, Coquitlam, B.C. Awarded Sept. 24. CD 9/26, under LB.

Blakeburn Constr. Ltd., Terrace, B. C. CA **$689,103**, rein.-con. SENIOR HIGH SCHOOL, PRINCE RUPERT, B. C. School Dist. No. 52, Prince Rupert, B. C. Awarded Sept. 24. CD 9/9, under LB.

▲ **Ocean Steel & Construction Ltd.**, 406 Chesley St., Saint John, N. B. CA **$1,000,000**, supply, fabrication, erection structural steel frame, 4 story, bsmnt., U-shaped, 100 ft. frontage, extended to 128 ft. 8 in. depth PROVINCIAL BLDG., SAINT JOHN, N. B. Provincial Dpt. P. Wks., Parliament Bldgs., Fredericton, N. B. Mott & Myles, 13 Germain St. Saint John, N. B., engrs.-archts. Awarded Sept. 30. CD 4/22.

▲ **Bennett-Pratt Ltd.**, 5 Maple Leaf Dr., Weston, Ont. CA **$1,688,607** (8 bidders) 3 story, 21 classroom, 142 x 200 ft. structural steel frame, brick and block walls, McMurrich PUBLIC SCHOOL, poured concrete fdn., 115 Winona Dr., TORONTO, ONT. Toronto Bd. Educ., 155 College St., Toronto, Ont. Bids Sept. 9. CD 8/20.

▲ **Del Constr. Co., Ltd.**, 2461 Bloor St., W. Toronto, Ont. LB **$3,996,000** (10 bidders) 7 story, 88,270 ft. stone air-conditioned ADMINISTRATION BLDG., 159-165 College St., TORONTO, ONT. Toronto Bd. Educ., 155 College St., Toronto, Ont. CD 9/12.

▲ **Principal Investments Ltd.**, 133 Richmond St. W., Toronto, Ont. Owner Builds. **$1,250,000**, 9 story rein.-con. OFFICE BLDG., University Ave. near Dundas St., TORONTO, ONT.

Hudson Development Corp., 9720 Jeanne Mance St., Montreal, Que. Owner Builds. **$750,000**, 25 concrete, brick BUNGALOW HOUSING DEVELOPMENT, near Main Rd., DELSON, QUE. Roger Chalifoux, 6275 Papineau Ave., Montreal, Que., archt.

Aime Frenette, 2035 Filion St., St. Laurent, Que. Owner Builds. **$500,000**, two, 3 story, finished bsmnt., 28x43 ft. brick, 24-suite APARTMENT BLOCKS, concrete fdn., 17th Ave., MONTREAL, QUE.

LATIN AMERICA

BUILDINGS—LB & CA

▲ **Brazilian National Steel Co.**, Volta Redonda, Brazil, CA design, procurement and construction supervision of 17 addnl Koppers-Becker ovens, BRAZIL, Koppers Co. Inc., Relations Section, Building Dpt., Koppers Bldg., Pittsburgh, Pa., U. S. A.

(Proposal Advertisements see pp. 192 too 194)

Another Winning Combination

CLARKLIFT* 40 and

CONTINENTAL RED SEAL POWER

CONTINENTAL F4162 Engine

DISPLACEMENT 162 cu. in.

HORSEPOWER 49 at governed speed of 2,200 rpm.

MAXIMUM TORQUE 123 lb. ft.

Available also for use on LP fuel

For years, the experience of users has underscored one fact: for day-after-day dependability, this Clark-Continental work team is mighty hard to beat. In the new Clarklift 40, as in numerous other Clark models that are gaining ever-wider acceptance in the industrial and construction fields, Clark Equipment and Continental Motors have joined hands, with outstanding results. Their engineering experience and manufacturing skill are producing specialized machines that speed the work and cut the cost on a steadily-lengthening list of jobs. And while they vary widely in size, in power, in purpose, these units have in common an amply-proved capacity to operate day in, day out, with a minimum of costly down-time.

ANY EQUIPMENT IS BETTER WITH CONTINENTAL RED SEAL POWER

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In the large Como Park Junior High School, St. Paul, Minn., Transitop panels reduced the dead load factor, speeded erection and permitted lighter framing and less expensive construction. Architect and Engineers: Haarstick Lundgren and Associates, Inc., St. Paul, Minn.

The Woodhull School, Lansing, Michigan, built of pre-engineered, modular, expandable units uses Transitop panels to achieve speed and economy in construction. Designed and built by Schoolmaker, Inc., Ann Arbor, Michigan.

For tomorrow's schools...

Johns-Manville PRE-PRIMED TRANSITOP®

building panels cut costs, speed erection, permit colorful curtain wall construction

Johns-Manville Pre-Primed Transitop building panels are being widely and increasingly used by architects and engineers in the construction of modern schools. As a result, educators and taxpayers are enjoying the advantages of quality-built schools with substantial dollar savings in building costs.

Transitop is an insulating structural panel, consisting of an impregnated core faced on two sides with incombustible Asbestos Flexboard® sheets.

Both faces of Transitop panels are pre-primed at the factory, eliminating priming on the job. Thus the use of color, as an expression of decoration, is completed faster at less cost.

Used for panelized curtain wall construction or for interior walls, Transitop panels are available 4′ wide by 8′ up to 12′ in length; in thicknesses of 11/16″, 1 1/8″, 1 3/16″, and 2″. In the 1 3/16″ thickness they weigh only 4.7 lbs. per square foot. For illustrated brochure "J-M Asbestos Transitop," write to Johns-Manville, Box 158, New York 16, N. Y. In Canada, Port Credit, Ontario.

JOHNS-MANVILLE

JOHNS-MANVILLE JM PRODUCTS

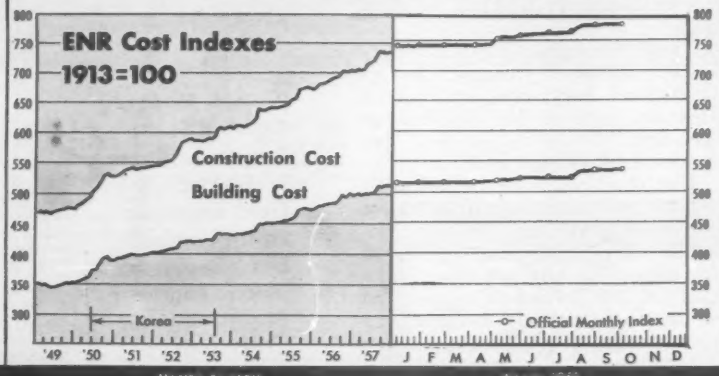
Construction Scoreboard

ACTIVITY THIS WEEK

COST INDEXES AS OF NOW

ENR INDEXES (1913=100), 20-cities' average	Week of Oct. 9 1958	% Change from Sept. 11 1958	% Change from Oct. 10 1957
Construction Cost	775.10	+0.06	+5.2
Building Cost	536.33	+0.05	+3.8

convert above indexes to 1926 = 100: Divide Construction Cost by 2.080; Building Cost by 1.850
1949 = 100: Divide Construction Cost by 4.770; Building Cost by 3.518



AMOUNT OF CONTRACTS LET

By Ownership	This Week millions	Cum. 42 wks 1958 millions	Chge '57-'58 %
All Heavy Constr.	$248.1	$16,176.6	+7
Private	112.2	6,527.9	−6
Public	135.9	9,648.7	+19
State & Municipal	119.2	7,127.7	+17
Federal	16.7	2,521.0	+27
By Type of Work			
Public			
Waterworks	3.6	258.1	−12
Sewerage	7.7	497.7	+10
Bridges*	15.2	596.9	+1
Highways	56.4	2,998.0	+20
Earthwork, Waterways	1.9	903.1	+4
Buildings, Excl. Housing	29.8	2,213.4	+17
Housing	5.8	975.7	+71
Unclassified	15.6	1,216.0	+34
Private			
Mass Housing	52.2	3,142.9	+26
Commercial	27.5	1,546.0	+9
Industrial	24.1	1,475.3	−45
Unclassified	8.3	353.5	−9

* Includes private bridges.

NOTE: Minimum size projects included are: Waterworks and waterways, $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

NEW CAPITAL FOR CONSTRUCTION

	Week of Oct. 9 millions	Cum. 41 wks 1958 millions	Chge '57-'58 %
Corporate Securities	$78.0	$4,310.0	−8
State and Municipal:			
All Except Housing	94.3	5,109.6	+18
Housing	...	114.5	−27
Federal Loans	3.2	162.2	−6
Federal Aid	...	2,596.2	+20
Total Nonfederal	$175.5	$12,292.6	+7
Federal Appropriations:			
Projects in U. S.	...	$3,946.1	+42
Outside U. S.	...	35.2	+21
Total New Capital	$175.5	$16,273.8	+14

CONTRACTS AWARDED

	1958 Sept. (millions)	1958 9-Mos. (millions)	% Change from 1957 Sept.	% Change from 1957 9-Mos.
Total U. S., ENR reported	$1,348.1	$15,079.7	+ 8	+ 7
Private	409.1	6,124.5	−36	− 6
Public	939.0	8,955.2	+56	+19
State and Municipal	809.2	6,572.2	+54	+16
Federal	129.9	2,383.0	+70	+26
ENR Volume Index, 1913=100	541	634	+16	+ 4

NEW CAPITAL FOR CONSTRUCTION

Total U. S.	$3,378.5	$15,904.5	+244	+15
State and Municipal Bond Sales	577.9	4,985.1	+28	+16
Corporate Security Sales	378.5	4,184.5	−19	− 4
Federal Loans, Aid (nonfederal work)	2,399.7	2,753.6	+28,981	+18
Federal Appropriations (federal work)	22.4	3,981.2*	−60	+42

* Includes funds for outside U.S.

MATERIALS SHIPMENTS

Unit	1958 June (J) July (Jy) Aug. (Ag)	1958 Cum. (No. of Mos.)	Percent Change from Year Ago Mo.	Percent Change from Year Ago Cum.
Portland Cement, Bureau Mines, thous bbls	34,189(Ag)	194,515(8)	−3	+2
Concrete Paving Awards, PCA, thous sq yd	11,173(Ag)	84,232(8)	+111	+26
Fabricated Structural Steel, thous tons	298(Ag)	2,506(8)	−22	−11
Bookings, AISC, thous tons	226(Ag)	1,820(8)	+23	−21
Reinforcing Bars, Net, AISI, thous tons	180(Ag)	1,363(8)	− 6	−20
Lumber, NLMA, mil fbm	2,825(Jy)	18,856(7)	+0.4	− 6
Orders, mil fbm	3,063(Jy)	18,778(7)	+ 8	− 6
Production, mil fbm	2,716(Jy)	18,159(7)	−0.4	− 8
Clay Products, Bureau of Census				
Brick, Unglazed, Common, Face, mil bri	616.5(J)	2,837.8(6)	+ 9	+ 1
Vitrified Clay Sewer Pipe, thous tons	165.8(J)	751.6(6)	+ 9	− 6
Structural Tile, Unglazed, thous tons	52.3(J)	263.2(6)	− 7	+12
Asphalt Products, Bureau of Census				
Asphalt Roofing, thous sales sqs	5,680.6(Jy)	32,442.8(7)	+ 5	+ 9
Asphalt Siding, thous sales sqs	90.1(Jy)	528.6(7)	+13	− 6
Aluminum, Wrought, Net, Bureau Census				
Sheet and Plate (non-heat treatable), mil lbs	83.0(J)	450.0(6)	+ 2	− 8
Wire and Cable, mil lbs	23.6(J)	131.0(6)	− 1	−12
Extruded Shapes (soft alloys), mil lbs	62.1(J)	307.2(6)	+ 8	− 1

EMPLOYMENT AND FAILURES

Contract Const Employment, BLS, thous	2,942(Ag)	2,586(8)**	− 4	− 7
Contractor Failures, Dun & Bradstreet				
Number	158(Ag)	1,471(8)	− 4	+ 5
Liabilities, thous	$8,687(Ag)	$80,962(8)	−17	+ 4

**Average per month

What It Takes to Work Abroad

Working in construction overseas, especially in underdeveloped countries, is for the man who can easily sever his attachment to Broadway or Main Street.

That's the opinion of George H. Fischer, executive secretary, Overseas Craftsman's Association, Los Angeles. Here are some of Mr. Fischer's observations on the requirements and conditions of overseas work:

First of all, you need the basic skills of your profession or craft. But you also must have a taste for adventure, a flair for diplomacy and a tolerance for those who may not have similar qualities. You'll also have to know how to improvise without discarding entirely the rule book of your profession.

1. Qualifications

Age is a somewhat vague factor in obtaining work in construction abroad. Age restrictions are governed by three basic factors:

- Climatic and living conditions at a job site.
- Physical condition of the individual.
- Group insurance programs of the employer.

Generally, the accepted age range is between 25 and 55. However, exceptions are made—especially for younger men. Many companies are restricted by insurance terms allowing them only a small percentage of total job site staff over 50 to 55 years of age. But if an individual is exceptionally qualified, is in top physical condition and if his type of work does not require great physical hardship or effort, the restriction may be waived.

Local and special conditions, in the long run, will govern actual hiring practice of a construction firm. For example, a company working in Saudi Arabia has a firm age ceiling of 50, because of the particularly enervating effects of the area's intense heat on older personnel.

Another company, operating in Sumatra, placed its age maximum at 35. Then it discovered it could find few men of that age who also possessed the high competence required for the job. The age limit was raised to 45.

When seeking work overseas you must be in the best of physical condition. Living and working conditions in the underdeveloped regions of the world are rigorous. Medical facilities are skimpy in certain areas. Although many companies employing large numbers of men in an isolated area maintain their own dispensaries, most companies rely on local medical assistance. Some also make use of military physicians when constructing government projects. A chronic disorder automatically excludes a candidate from consideration for overseas work. Physical examinations that precede hiring are comparable to those given by most insurance companies, and sometimes are as stiff as those given by the U.S. Air Force.

At least five years of experience in the profession is sought by companies hiring for overseas work. There are some exceptions to this general rule. Party chiefs and instrument men, for example, can get by with three years of experience.

Opportunities for engineers just out of college are rare.

2. What You Are Paid

Compensation is generally excellent, particularly in the Mid and Far East and South America (see table). Salaries for those working in Western Europe do not vary greatly from those paid in the U.S. Employers find that potential employees are willing to sacrifice the higher salaries earned in underdeveloped areas in order to have the better living and working conditions usually found in Europe.

Completion of contract is rewarded by a bonus of from 10% to 15% of annual pay. If the contract is not completed by the employee, both the bonus and return transportation are forfeited.

Room and board or a subsistance allowance are usually provided. And if employees' families are permitted, their transportation to the job site may be paid.

Minimum work week on overseas projects is 48 hours. In some cases it may run more than 80, with the average being 54 to 60 hours. Few engineers receive overtime pay, particularly if they're in the upper echelon.

3. Your Taxes

After it's given, some of the salary may be taken away. Tax rates vary from country to country (see table). Sometimes, however, agreements are made between a foreign government or the client and the engineer-contractor abolishing taxes for Americans, or at least reducing them. These agreements

And Here's What You Earn

(monthly averages)

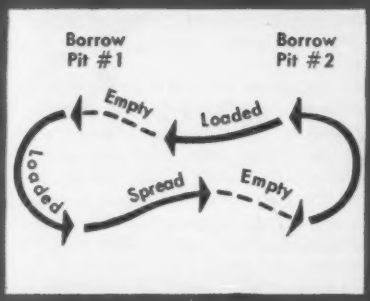
Position	Mid and Far East	Latin America
Project Manager	$1,600	$1,400
General Supt.	1,300	1,200
Project Engineer	1,100	1,050
Sr. Field Engineer	950	900
Field Engineer	850	800
Office Engineer	750	725
Elec. Engineer	1,000	950
Mech. Engineer	1,000	950
Design Engineer	1,000	950
Craft Supt.	1,200	1,100
Camp Manager	1,000	950
Craftsman	700	700
Office Manager	850	850
Chief Accountant	900	900
Accountant	725	700
Adm. Manager	1,000	1,000
Doctor	1,200	1,200

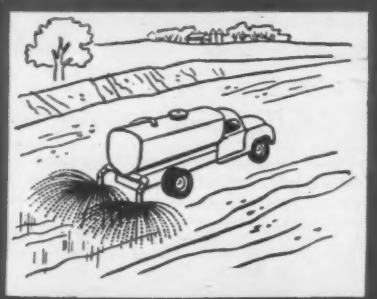
(European rates are comparable to those in the U. S.)

HOW TO

cut your cycle time for more yardage per shift

Here are six ways to take advantage of the speed of your rubber-tired, self-propelled scrapers . . . for more efficient, more profitable dirtmoving.





1. Plan job layout carefully. Keep haul routes as short as possible, with a minimum of turns. Often, it's possible to open cuts at either end of the fill (or fills at either end of your cut), to eliminate half of your turning. This makes an important saving if your pushers have time to load the faster scraper cycles. It also saves tires, fuel, and mechanical repairs . . . plus relieving haul-road congestion and passing slow-downs.

2. Team units according to speed. Whenever possible, work crawler-scrapers on one section of job, self-propelled scraper units on another. Or, at least, let them use different haul roads. This prevents passing delays for fast-hauling scrapers or slow-downs to speed of crawler units where passing is not possible.

3. Check interval between scrapers. On haul and return, operators often tend to bunch up. In all cases, your scraper operator should hustle as much as possible to close a long gap between units . . . slow down when too close. Where two scrapers come onto cut together, load first guy a little short, give the second a maximum load. On dump, spread No. 1 short, send No. 2 to far end.

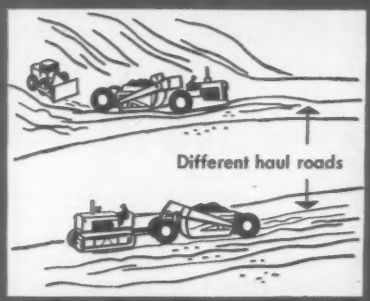
4. Maintain haul roads. Use a motor patrol (or dozer) to eliminate ruts and rough washboard surfaces, so your scrapers can travel at higher speeds. Grades should also be flattened as much as possible, to improve cycle time. Not only will this save time, and repairs, but it will increase safety and reduce operator fatigue.

5. Reduce dust with sprinklers. Use of sprinkler to keep haul roads moist (not wet) will permit higher travel speeds . . . cut down on dust for better visibility . . . and prevent excessive wear on your equipment.

6. Make full use of rubber-tired speed. On the fill, your operator should spread on the run in the highest gear possible. However, he should not hesitate to shift down as momentum is lost. Lugging the engine usually results in slower speed than top range of next lower gear. It's better to shift down and accelerate faster. In the cut, operator should not try to cram in the last cubic foot of dirt. Time spent here can be better used in high-speed travel, to increase number of loads delivered.

Another way to get more pay yards for less net cost is to modernize your equipment fleet. Get bigger-capacity production units, more speed and maneuverability.

Why not talk to your LeTourneau-Westinghouse Distributor . . . let him show you cost and production figures on modern 28, 18, and 9-yd Tournapulls®. Then compare with the output of less modern units of your fleet? 1857-DC-1



LeTOURNEAU-WESTINGHOUSE COMPANY, PEORIA, ILLINOIS

A Subsidiary of Westinghouse Air Brake Company

Where quality is a habit

How Foreign Taxes Hit Earnings

Far East:	**Little or no tax on earnings of U. S. personnel.**
Iran:	**First $1,116 of single person's pay is exempt. Double exemption for married person. Tax of 4% of income in excess of exemption to $4,700, graduating to a maximum of 50% for earnings over $62,500.**
Saudi Arabia:	**Annual exemption on first $1,333 of pay. Tax of 5% on earnings over $1,333 to $5,333. Tax goes to 10% on earnings over $5,333 to $13,333, going to 20% on income over $13,333.**
Western Europe:	**U. S. personnel generally exempt from income taxes.**

are not the rule, so a prospective overseas worker must investigate tax rates himself when applying for work.

There is a bright spot. Under this nation's laws a citizen is partially exempt from U. S. income taxes if he lives in a foreign country for 510 days out of 18 consecutive months. The taxes for that period and all other consecutive periods are waived on income up to $20,000 a year.

For the most part foreign taxes are not heavy, although Australian income taxes on Americans' pay is about the same as in the U. S. However, it's less than Australians pay.

4. Employer Screening

Most company employment managers have a problem in common—lots of work and little time. An employment manager is expected to recruit and process large numbers of workers for the company in a short period of time. He wants to spend as little time as possible reading applications and concentrate on interviewing and evaluation.

Lengthy dissertations on personal qualities are therefore unwelcome; in some cases it could result in being eliminated from consideration even before an interview is granted.

Brevity, clarity and legibility are the keys to a good first impression. The resume should list full name, address, telephone number, social security number, birth date, marital status, dependents, passport number, school record, degrees, licenses, certificates, past employers' names and addresses, compensation, job title and responsibilities, type of project and name of project. With the exception of welding certifications, no tests are given. An employment manager bases his decision on investigation and personal judgment, along with the opinions of department heads he may consult.

5. Your Employment Contract

Employment agreements for overseas work are basically the same from employer to employer. They may differ on minor points depending on where the company is incorporated. And there may be differences in term of contract and on provisions for employees' families.

The contract specifically cites location of employment, job classification, wage and salary guarantees, work hours, transportation allowances, bonus payments, insurance, living allowances, employee conduct and termination clauses.

Many firms deduct a percentage of an employee's salary each month until a return transportation fund is accumulated. If the employee completes the contract, his return transportation is provided and the money deducted is returned to him. Should the employee terminate the contract before the specified date, the transportation fund is used for the return ticket.

6. Now You're on the Job

The acid test comes when you are at the job site. Working and living abroad, especially in the underdeveloped regions of the world, can be frustrating, particularly if the employee must train local help who speak different languages, and have no knowledge of construction.

You must be patient, tolerant, calm and congenial. Those who are unstable will not last.

If you are working on a project being built with U.S. loan or grant development funds, or on U.S. military installations, government agencies will have provided their own clearances. These generally are for security reasons.

As an American abroad you automatically become a representative of the U.S., at least in theory. All your actions, good and bad, will reflect on your government and your employer. You are as much an ambassador of goodwill as you are an engineer or craftsman.

The ability to break, or at least minimize, mental and sentimental ties with home will be an asset. Take advantage of the attractions a foreign country has to offer.

In the more primitive areas of Asia and South America there is good hunting and fishing. In general, you will have to make your own recreation. Night clubs, theaters and movies are rare, although some companies do provide some sort of recreational facilities at their job sites.

7. Living Conditions

Food and camp conditions are extremely good on almost all job sites. Engineering construction companies with lengthy overseas experience have learned those are the two essential ingredients for a smooth-running project.

At projects where dependents are permitted, local conditions are usually such that a house or apartment can be rented. Areas in which family housing is obtainable include South America, Japan, India, Australia and Europe. Housing is usually good. (And sometimes it is luxurious, if you are willing to overlook the lack of central plumbing, heating and electricity.)

Tact should be employed in choosing living quarters. An American should not be ostentatious. He needn't live like a native, but neither should his quarters be more pretentious than those of local officials.

Cost of living in most countries rarely exceeds $300 a month for a family and many times it is closer to $200. The most desirable working areas are in Europe and Japan. Good living is also provided in such cities as Beirut, Lebanon; New Delhi, India; Karachi, Pakistan; Saigon, Vietnam; and Bangkok, Thailand.

Considered by some as the more difficult work-sites are Saudi Arabia and the many isolated areas in Asia.

(B&F continued on page 182)

TOURNAPULL® SCRAPERS These high-production Tournapull scrapers are available in 3 sizes; 1) B Fullpak® with 28-yd capacity ... 325 hp or 335 hp ... available with step-gear or power-shift transmission with torque converter; 2) C Fullpak, 18 yd, 210 hp, choice of step-gear or power-shift transmission; 3) D Tournapull, 9 yd, 138 hp.

TOURNAPULL REAR-DUMPS For heavy-duty, off-road hauling; can be interchanged with scrapers listed at left. 35, 22, 11-ton capacities. All models make non-stop U-turns in own length. Simple design (no frame, no springs) cuts maintenance cost. Heavy 3-layer, all-steel bowl construction helps beat shock-load problems.

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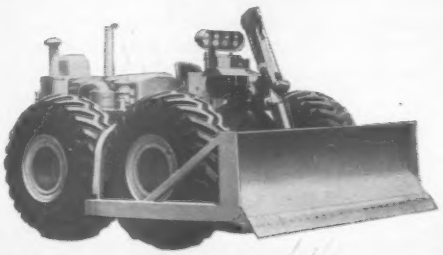
See new color film "New Roads to Profit". For a "ring-side" view of L-W machines — working under various job and weather conditions — let us show you our new colored, sound film, "New Roads to Profit". Better yet, check the speed and economy of these lowest-net-cost-per-yard machines on-the-job. Write for details.

L-W (ADAMS*) MOTOR GRADERS Heavy-duty L-W Adams model motor graders available in seven models, 60 to 190 hp, weighing from 15,500 to 30,200 lbs. Standard models have 8 forward speeds to 26 mph, 4 reverse to 13.7 mph, plus optional gear assembly for three extra-slow creeper speeds. Torque converter POWER-*Flow*® 550 and 660 models have 135 and 190-hp engines. Attachments include scarifier, power-shift moldboard, bulldozer, push-plate, snow plow, snow wing, snow-blo wing, and Jebco Elegrader.



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Homebuilders Ask License Law

Georgia homebuilders want to be partially regulated by the state.

Under a major bill to be considered by the state legislature in January, homebuilders starting in the business after Jan. 1, 1959 would be licensed and bonded. The measure is being sponsored by the Home Builders Association of Georgia.

Details of bonding requirements and builder qualifications are not yet completed. It appears certain, however, the law would affect counties having populations of 30,000 or more. Also, a new state board would be created to administer the law and give examinations.

A somewhat similar measure was introduced last January, but was never acted on because of an overcrowded calendar. That bill did not contain a bonding requirement.

• **Sure to pass**—The measure was unanimously approved by builders attending a recent state-wide meeting of the Georgia Home Builders Association. The 10 state chapters are also providing unanimous backing.

Even non-members of the association agree passage of the bill would be healthy for them. One says the law will "keep out the butchers who have been building houses on weekends with neither know-how nor capital."

According to one official of the state association, "The bill is almost sure to pass. We have assurance of assistance from influential state leaders."

• **No national policy**—The proposed measure in Georgia does not stem from any policy established by the National Association of Home Builders. NAHB told ENR state licensing laws for homebuilders have been discussed at its meetings, but the group never acted on them. The issue is neither general nor pressing.

One NAHB spokesman says the Georgia proposal is "news to me." He said, however, proposed legislation in the states occasionally does come to NAHB for review.

These efforts are usually aimed at protecting established builders against irresponsible or incompetent newcomers who could damage the industry's reputation with the public, the builders' spokesman said.

Another type of measure NAHB encounters is originated by labor unions. These measures seek to protect the building trades against use of nonunion labor.

The Rhode Island legislature recently defeated a labor-sponsored bill that would have required builders to use only subcontractors using union-labeled products.

• **Connecticut proposal**—Three years ago a bill similar to the Georgia proposal was given to the state legislature. Although it did not call for licensing of homebuilders, it would have required a builder to place $1,000 in escrow for every house he put up. Its aim was to guarantee that the house was exactly as represented and specified. The money would have remained in escrow for period of six months after sale of the structure.

The bill was strongly opposed by the Home Builders Association of Hartford County and died in committee.

Renewal, Road Plans Protested

Highway and urban renewal bonds face court challenges in South Carolina and Kentucky. At issue in both cases is the constitutionality of legislation authorizing them.

In South Carolina, the state supreme court has received a petition requesting nullification of a law authorizing $6.5 million in bond issues to pay for construction of secondary roads.

The bond issues would pay for a highway fund deficiency resulting from diversion of one-cent-per-gallon of the state's gasoline tax to South Carolina's general fund.

The petition names Gov. George Bell Timmerman, Jr., state Treasurer Jeff Bates and the Highway Department as respondents.

Contained in the act is the provision that "all roads designated for hard-surfacing in the state secondary highway system in any fiscal year shall be selected from a list submitted during each year by the county senator and at least one half of the House delegation of the county in which the roads may be located."

The petitioner argues that this section of the bond legislation violates the state constitution, thereby rendering the entire section of the act unconstitutional.

The petition specifically charges that the act's provision is an attempt of the legislative branch of the government to assume the powers and perogatives of the executive and administrative branches of government.

The suit was initiated after bond attorneys questioned the law's constitutionality.

In Kentucky, a proposed $5 million bond issue for urban redevelopment in Louisville is being tested in circuit court.

A taxpayer action questions the constitutionality of the renewal program. It also asks whether public funds may be used to condemn property that has been selected for renewal for resale to private interests.

The action also questions the right of the city to transfer to a separate renewal agency the power to condemn property for urban redevelopment.

These issues are not new in the history of urban redevelopment. Similar legislation has been challenged in several cities throughout the nation and has generally been upheld by the courts.

City Seeks Solution to County's Water Problem

No annexation, no water is the present rule, but City of Toledo and Lucas County, Ohio, officials eventually must decide whether or not they will have a joint water supply system. Residents of four nearby townships are clamoring for water service.

Construction of a county system to supply the four towns would cost more than $41.6 million, compared with $14.6 million to expand the city's system to serve the same area.

While cost favors a city system, there's a major obstacle. The city won't consider a water policy without linking it to an annexation plan. And county officials are reluctant to promise that. There's also a question of how much to charge for water service. A 75% surcharge to county users has been intimated. This would make a county-owned system cheaper in the long run.

Builders Fight Cut in Water Extension Refund

Homebuilders in Little Rock, Ark., have successfully delayed a decision to reduce municipal refunds for the extension of water lines.

Builders now have an option of a $72 cash refund or half the water revenues for 15 years. The Municipal Waterworks Commission, fearful of impairing its credit with heavy refund liabilities, wants to cut the cash refund to $60 and the alternate revenue-sharing period to five years.

The homebuilders claim costs of installing water lines are going up and that they are not getting their money back now.

(B&F continued on page 185)

MORE THAN 110,000 SQ. FT. of Granco Roof Deck will blanket new KW-Dart Truck Co. plant in Kansas City. Architects: *William B. Fullerton, Jr. and Earl McCamis;* General Contractor: *Universal Construction, Inc.;* Steel Erector: *Havens Structural Steel Co.*

Men on the job describe extra benefits of GRANCO ROOF DECK

JOB SUPERINTENDENT Bert Clay of Universal Construction, Inc. says, "Granco sheets cover over 40 sq. ft. apiece. That's a big help when you've got a lot of area to cover. The paint job on these sheets is good. Delivery's been good, too. I give Granco credit for a fine job in bundling these sheets. When you have to bring up one at a time, it costs plenty. We hoist Granco sheets 20 squares at a time. They're ideal for handling."

ROOF DECK ERECTOR Bob Izard of Izard Sheet Metal Co.* says, "One of the best features of Granco Deck is the speed of erection. Sheets fall right into place. Wide rib openings make it easy for welders to strike an arc. We've put down as many as 154 squares a day. That's more than you get with most decks! Granco sheets are good-looking, too. We like 'em fine!"

**Sub-contractor for Havens Structural Steel Co.*

Comments on Granco Roof Deck, appearing at left, were recently made by members of a building team at the job site. Erecting a new assembly plant for KW-Dart Truck Co., they work with Granco Roof Deck every day. They have a chance to compare it with other decks, and . . . they like what they see!

Here are some other important reasons why we believe you will, too: Granco Deck has flared ends for convenient nesting. Sheets are available in 18, 20 and 22 gage. With one-inch insulation board, twenty year roofing bonds are obtainable. Year-around construction. No weather problems! Like *more* information on Granco Roof Deck? Just mail the coupon below.

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GRANCO

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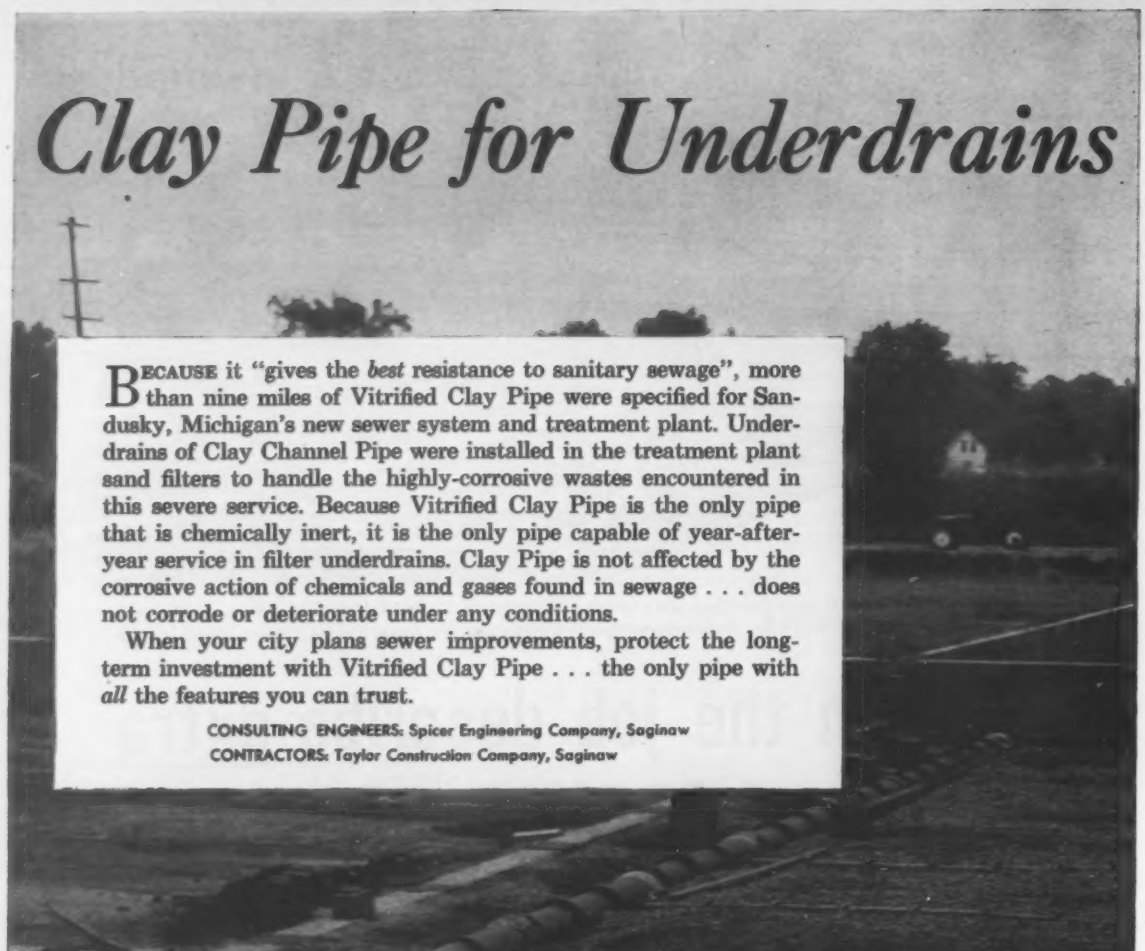

BECAUSE it "gives the *best* resistance to sanitary sewage", more than nine miles of Vitrified Clay Pipe were specified for Sandusky, Michigan's new sewer system and treatment plant. Underdrains of Clay Channel Pipe were installed in the treatment plant sand filters to handle the highly-corrosive wastes encountered in this severe service. Because Vitrified Clay Pipe is the only pipe that is chemically inert, it is the only pipe capable of year-after-year service in filter underdrains. Clay Pipe is not affected by the corrosive action of chemicals and gases found in sewage . . . does not corrode or deteriorate under any conditions.

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CONTRACTORS: Taylor Construction Company, Saginaw

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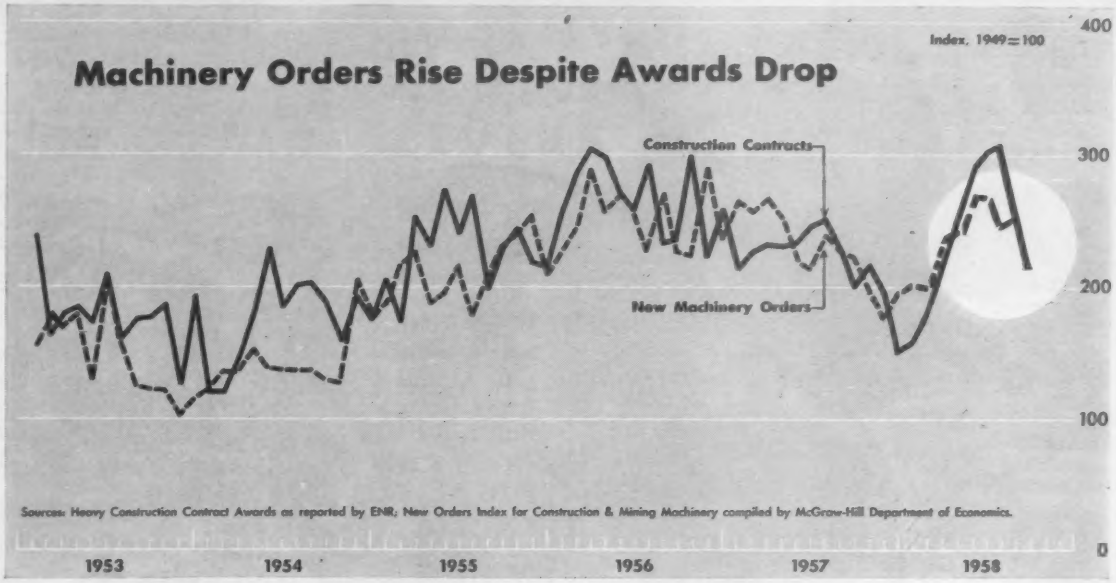

August Volume Tops Last Year by 11%

Construction machinery orders in August scored a gain over last year for the fourth consecutive month, according to the McGraw-Hill Department of Economics Index. The August Index value of 245 (based on 1949=100) was 11% above a year ago and 2% above July of this year. But it was short of the 1958 high in May when the value was at 274.

In contrast to the August rise in machinery buying, construction contractors found their new business declining. This trend continued in September, with the Heavy Construction Contract Index dropping to 215, also based on 1949=100. Although September contract volume was 8% greater than the volume of one year ago, it was the lowest month this year since February.

State Agency Backs "Buy American"

Pennsylvania is reaffirming its restrictive highway policies despite indications that the U.S. Bureau of Public Roads, backed by President Eisenhower, will clamp down on state "Buy American" highway contract clauses (ENR Sept. 25, p. 109).

Pennsylvania's justice department ruled last week that the highway department has authority to ban the use of foreign-made materials in highway construction. The ruling covered all classes of roads, including federal-aid highways.

Pennsylvania's materials ban is aimed primarily at foreign steel. The material is barred by a bid specifications clause requiring inspection of materials at the plant where they are produced

In Pennsylvania, "responsible agencies" maintain records of every heat, each batch being identified by a heat number.

The attorney general said, "No similar facility for satisfying the highway department of proper manufacture exists. While samples of steel may test out after manufacture and be found adequate, such a test is not so thorough as one at the source."

Because the highway department considers such tests essential, "and since these tests can only be made during the course of manufacture, we are of the opinion that the highway department specification is reasonable and not arbitrary."

The attorney general concluded that the highway department can refuse to approve the use of steel made where the highway department cannot inspect it at the time of manufacture.

Builder Loses a Round: Model Home Is Barred

A Delaware builder's model house violates community deed restrictions reserving the property for residential use only, a judge has ruled.

The builder, W. Percival Johnson & Son, is erecting six houses in Welshire, a community on the outskirts of Wilmington. A nearby home owner, Carl D. Shields, filed two suits to prevent operation of the model home (ENR June 5, p. 117). The present decision, concerning deed restrictions, was handed down by the Court of Chancery.

Mr. Shields also charges that the model house violates the residential zoning of the community. This suit is still pending in Superior Court.

The Chancery Court decision turns on the fact that the deed restriction was in force before the Johnson firm bought the Welshire tract. Mr. Shields also bought his property before the Johnson firm arrived. The judge said, "In the ordinary development, where sample houses may be used from the outset, it may well be that the purchasers would . . . not be permitted in law to complain." He added that a developer is free in setting deed restrictions to reserve the right to erect sample houses.

The judge said the Johnson firm can continue to build and sell houses in the tract, including the one used as a model, but cannot maintain a model house in the face of prior restrictions.

(*B&F continued on page* 187)

"Field tested" for thousands, perhaps millions, of years, the simplicity of design of this sea shell has proved its practicability as dependable housing. In its field, the design of the Peerless Type A horizontal split-case pump is quite as remarkable. The split at the center line allows easy maintenance without disturbing the piping. The rotating element lifts out as a unit for inspection or repair. Mechanically and hydraulically, the quality and operation of this pump is unsurpassed – *it is the type of pump you can apply with absolute confidence to general purpose pumping duties in the broadest sense.* An added advantage: the Type A pump line is the broadest offered by any manufacturer.

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Court Decision Strikes At State School Funds

West Virginia's school-building program may be hurt by a loss of $15.2 million in bonding potential and $2 million in annual revenue as a result of two court decisions and a threatened tax change.

The first loss, of $260,068 in revenue, came when the State Supreme Court ruled unconstitutional a property transfer tax existing in 10 counties. The state was deprived of $8.9 million in bonding potential and $1 million in income when another Supreme Court decision reduced the assessed valuation of certain types of assets. Finally, a savings deposit tax exemption proposal coming before voters in November would, if approved, eliminate $6.3 million in bonding power and $738,484 in school income.

Business Briefs . . .

• **More pipeline miles**—Wisconsin Power & Light Co. has been authorized by Wisconsin Public Service Commission to build a $1.2 million gas pipeline between Fond du Lac and Beaver Dam, Wis. The line will consist of about 40 miles of 10 in. pipe and 1.8 miles of 8 in. pipe.

• **Atkinson acquires contracting firm**—Guy F. Atkinson Co., San Francisco, has acquired United Construction Co. of Winona, Minn. United has been active in development of the upper Mississippi River and dam construction in the Midwest.

• **Turnpike extension abandoned**—Florida State Turnpike Authority has dropped plans to extend the Sunshine State Parkway from Fort Pierce to Orlando. An adverse feasibility report by Coverdale & Colpitts of New York City showed a $75 million bond issue to finance the extension could not be sold at this time. Traffic estimates also were considered insufficient to pay for the project.

• **Lots of lots**—Philadelphia has started on a program of building up to 200 parking lots outside the center city area. They will range from small neighborhood parking areas to major park-and-ride lots at transit centers.

• **Goal: Cost cutting**—Stanford Uiversity is undertaking a one-year study to reduce cost of repetitive operations in such fields as dredging, pile driving, material-handling, concrete placement and building erection. The work is for the Navy's Bureau of Yards and Docks.

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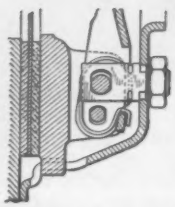
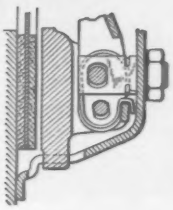


Patent No. 2818952



Patented rolling fulcrum pin action, in the release lever, results in much less friction and wear, and smoother release operation in this clutch than in some other types of clutches. Pin automatically returns to original position. Carefully balanced levers avoid lever throw-out at high speeds.

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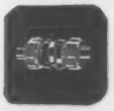
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Hoffa Monitors Take New Tack

Legal moves in federal court that controls teamster monitors could lead to ouster of president Hoffa

Dilatory tactics, new legal complications and lack of progress in the long fight to unseat James Hoffa as teamster president now raise the possibility of a full-fledged receivership for the 1.6 million member union.

Chances of such a development depend on answers to these questions:

- Is the present monitorship of the union legal?
- Is it effective?
- Has the Hoffa regime earned the right to assume full control of the union?

Within the next few weeks, hearings on all these issues will begin in the Washington, D. C., courtroom of 82-year-old federal Judge F. Dickinson Letts, who set up the monitorship. If his answer to these questions is "no," his alternative will be to start from scratch again.

• **A receivership?**—These factors in the teamster picture are pointing to a receivership as a possible solution:

There's a legal challenge of the monitorship itself by Martin F. O'Donoghue, chairman of the board of monitors. Mr. O'Donoghue is contending that the consent decree, which established the monitorship, was not a proper disposition of the original lawsuit that contested the propriety of Mr. Hoffa's election. If he is correct, the teamsters union would revert to its pre-convention status under Dave Beck.

However, a second monitor, Godfrey Schmidt, said in New York last week that as a lawyer he can't endorse Mr. O'Donoghue's contention. Mr. Schmidt further says he will not consent to the return of Dave Beck as lame-duck president pending a final ruling on Mr. Hoffa's election.

Mr. Schmidt says he would recommend the appointment of a receiver. Such a move would oust Mr. Hoffa from office. (In the eyes of the law, a receiver assumes legal title to the assets under his control and full direction of the organization entrusted to his care.)

Judge Letts is apt to be sympathetic to such a suggestion. When the monitorship was being conceived, the legal nature of the monitors (a word for which the law has no legal definition) was thoroughly considered. According to Mr. Schmidt, Judge Letts considered the originally proposed monitor concept too vague and it was on his initiative that the consent decree was changed to make the monitors "officers of the court" and to make them, in a legal sense, closer to receivers than they would otherwise have been. He may now find he didn't go far enough.

• **Some indicators**—The legal motions and petitions that are rapidly accumulating for a ruling by Judge Letts seem to bear this out.

A majority of the monitors have, in effect, told Judge Letts that the monitors can't make much headway with the teamsters. They say the union has complied with only 10 of their 21 clean-up directives and has violated the letter and spirit of the consent decree in other ways. One was clearing the election of Mr. Hoffa's friend Harold J. Gibbons as head of Joint Council 13 without first checking with the monitors.

The monitors have accordingly asked Judge Letts for more authority over the union including subpoena powers.

At the same time, steps are being taken to destroy the board of monitors as a working organization.

The teamster representative on the board, L. N. D. Wells, has long been at odds with Mr. O'Donoghue and Mr. Schmidt. Now the teamsters union has asked Judge Letts to oust Mr. Schmidt on grounds of "conflicts of interest." And Mr. Schmidt has been sued on another front by a dissident teamster who claims a failure to account for funds collected to help prosecute the original teamster suit. These charges are all denied by Mr. Schmidt.

The upshot, at best, is that the last remaining grip on the nimble Mr. Hoffa is slipping. And if plans for a teamster election to re-elect Mr. Hoffa are to be stalled, Judge Letts may have to come up with something more effective than the present monitorship.

Builders Shut Down in Toronto

A new approach to collective bargaining in the Toronto area may be in the making as a result of a recent employer shutdown of $100 million worth of construction projects. It has already been suggested that the Toronto Builders' Exchange should scrap its present system of negotiating individually with the seven unions it deals with and negotiate jointly instead.

The shutdown stems from a strike of 200 cement masons. Members of other trades refused to cross their picket lines. The exchange made it clear that work would not be resumed on any project until settlements are reached with all trades. An estimated 20,000 workers are idle and wage losses are reportedly running about $1 million a week.

The chairman of the employers' negotiating committee said: "If we settle with the cement masons today a picket line by another union tomorrow can again throw the industry into chaos."

The exchange has been negotiating with the carpenters, operating engineers and rodmen as well as the cement masons, but each of the negotiations has been conducted separately.

Contracts with all the disputing unions expired May 1. At the time of the cement masons' strike, settlements had been reached with only two of them—the bricklayers and laborers.

One of the exchange members says that the unions had proposed joint negotiations last spring but backed away after the exchange accepted the idea.

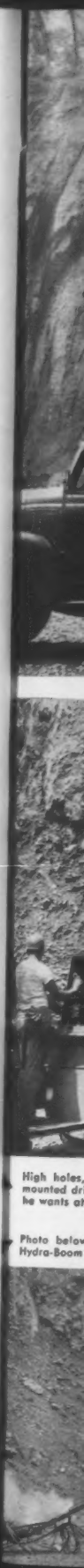
The exchange negotiates with carpenters, laborers, operating engineers, bricklayers, rodmen, stone masons and cement finishers. Various employer associations negotiate agreements with 17 other trades.

As a result of the shutdown, four of the unions are reportedly considering suing the exchange for lost wages.

The stoppage has seriously affected ready-mix companies and other industries that are tied to construction.

In the current dispute, the cement masons struck initially over the starting hour of the afternoon shift. A conciliation board, however, has recommended that this be submitted to arbitration. In the meantime, wages have become an issue. The board also recommended a 25 cent wage boost over a two-year period. This recommendation was accepted by the exchange. But the union, which now has an hourly scale of $2.17, rejected it.

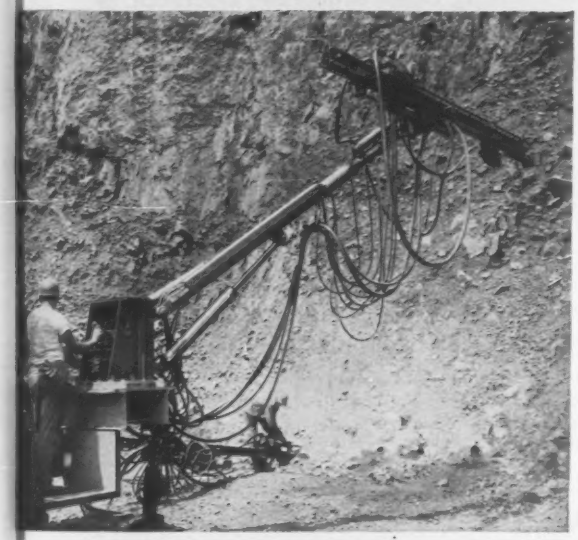
(Labor continued on page 191)



High holes, mounted dr he wants at

Photo belo Hydra-Boom

GYRO-FLO *in the news*



High holes, horizontal or at any angle, are no problem at all with this truck-mounted drilling rig. Operator at the control station can "spot" the drill anywhere he wants at the touch of a throttle.

Photo below shows that toe holes are "duck soup" for this Gyro-Flo 900 and Hydra-Boom combination.

Truck-Mounted Drilling Rig Helps Contract Driller Meet Deadline Dates

"Take a highway truck chassis, add a 900-cfm Gyro-Flo compressor and two I-R Hydra-Boom units equipped with two D45, 4½" Bore drifter drills, and you're in business with the fastest contract-drilling unit you ever saw." So says an official of the New Jersey Drilling Co., who admits that this is a slight oversimplification. "Some planning and good design went into this rig, too. The I-R distributor and sales engineer sure did a fine job on this rig."

The truck-mounted drilling rig shown here has lived up to his every expectation—helped him finish up faster and meet the tightest deadlines with a minimum of man-hours and drilling expense.

GYRO-FLO 900 PROVIDES AMPLE AIR POWER

A standard 900-cfm Gyro-Flo rotary portable compressor, less running gear, was mounted on a 6-wheel highway truck chassis. There was plenty of room available to mount two Hydra-Boom drills. The completely self-contained compressor provides ample air power for any job—will run both heavy-duty drills simultaneously at full pressure. The rig can move from job to job at a moment's notice and at maximum highway speeds. A frame above the compressor holds the drill towers while in transit.

HYDRA-BOOMS CONVERT SETUP TIME TO DRILLING TIME

With two heavy-duty I-R D45 rock drills mounted on Hydra-Booms, the New Jersey Drilling Co. can set up to drill any type of hole patterns in a matter of minutes. All drill-tower motions, including power dump and swing and power cone, are controlled by the touch of a throttle. Husky hydraulic cylinders, five for each drill, have completely replaced the time-consuming muscle power formerly required to set up for each hole.

Ask your Ingersoll-Rand representative to show you how Gyro-Flo compressors and I-R rock drills can help speed *your* drilling work, with important savings in cost per foot of hole.

Ingersoll-Rand

2-835 ♥ **11 Broadway, New York 4, N. Y.**

AN UNBEATABLE COMBINATION . . . GYRO-FLO COMPRESSORS AND I-R ROCK DRILLS

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HIGHWAYS AND HIGHWAY TRANSPORT

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OCTOBER 26 THROUGH 31, 1958

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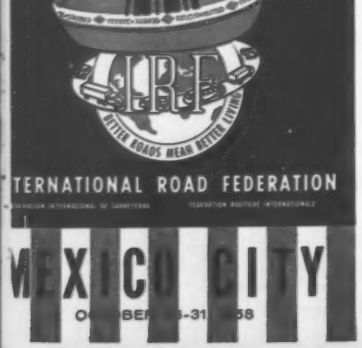

International Road Federation
1023 Washington Building
Washington 5, D.C., U.S.A.

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Foreman Ruled a Union Agent

NLRB holds union responsible for boycott resulting from orders it gave to foreman, a union member

The dual role played by construction's union foremen split the National Labor Relations Board this month on a secondary boycott issue relating to the installation of nonunion materials.

A majority of an NLRB panel ruled that a Carpenters District Council committed an unfair labor practice when it instructed a union foreman not to install nonunion Del-Mar cabinets. None of the carpenters on the job were approached by the council.

Board member Stephen Bean disagreed on the theory that the instructions were given to the foreman as a representative of the employer and that the law does not prevent union pressure on employers to refuse to handle nonunion goods.

The majority, consisting of Chairman Boyd Leedon and member John Fanning, reasoned that the council relied on the foreman's obligation as a union member to make the instructions effective. They point out that the foreman, as anticipated, did pass the instructions on to the contractor's employees. Result, they say, is that the council merely used the foreman "as the medium of transmission." The two members concluded that this added up to an effort to make the contractor cease doing business with Del-Mar.

At the same time, the board discharged the International Carpenters Union from any liability in the action. The distinction, it said, is that the council working rules prohibited members from handling nonunion goods, while the international's constitution apparently contains no such prohibition. In the absence of this, the direct approach to the foreman couldn't be treated as an approach to the contractor's employees.

In his dissent, Mr. Bean argued vigorously that a foreman is not an employee in the eyes of the law and that he was necessarily approached as a representative of the contractor.

"In my opinion," Mr. Bean said, "Section 8(b) 4(a) was designed to prohibit a union and its agents from inducing or encouraging employees to refuse to carry out their employer's instructions. The section was not designed . . . to prohibit a union from attempting to persuade an employer not to handle nonunion goods."

The fact that the foreman was also a union member, Mr. Bean contends, "cannot convert" the council's lawful instructions to him to an unlawful instruction to the contractor's employees.

Under Mr. Bean's approach, the "foreseeable consequences" of the chain reaction that occurred become immaterial. The fact that the council's instructions were passed on to the employees by the foreman without any authorization from the contractor is not a persuasive factor, Mr. Bean said.

As a result of the action, a cease and desist order has been issued barring the council from engaging in a secondary boycott to force "any employer or person to cease using, handling or otherwise dealing in the products of or to cease doing business with Del-Mar Cabinet Company, Inc., or any other manufacturer of carpentry or millwork not bearing the label of United Brotherhood of Carpenters and Joiners of America, ALF-CIO."

NLRB cases pending on October 2 are subject to the new standards.

Little Man Helped

NLRB changes its rules to aid small employers

More of the nation's smaller contractors can now turn to the National Labor Relations Board for help in labor disputes. That's the result of new jurisdictional standards of the NLRB.

Here's how the new rules affect the construction industry:

- A contractor whose dollar volume of interstate business is $50,000 a year can take a labor case to the board. The amount includes work done outside the state, work done in the state but for someone in interstate commerce, materials bought outside the state and materials made outside the state but bought in the state.
- He can also qualify for the board's jurisdiction if the labor dispute has a "substantial" impact on national defense.
- If the contractor is a member of an employer association, he meets the board's jurisdictional requirements automatically if the association itself qualifies.

The new standards, which revise those adopted in 1954, reduce the jurisdictional no-man's land in which many employers have found themselves unable to turn to either state courts or the NLRB for relief.

NLRB Halts Picketing Of Nonunion Contractor

A National Labor Relations Board trial examiner has ruled that a local of the International Brotherhood of Electrical Workers committed an unfair labor practice by picketing Ohio State University construction projects last May.

The picketing, which cuts close to the right-to-work issue now before Ohio voters (see p. 21), was a protest against performance of some of the work by a nonunion firm, Jess Howard Electric Co.

Shortly after Howard was employed on three campus projects, the union picketed the campus. This stopped work on 14 buildings costing some $20 million. Work was resumed June 2 after three of the 14 contractors on the campus filed unfair labor practice charges that led to withdrawal of the pickets.

The trial examiner held that picketing was for the purpose of inducing employees of the neutral contractors to cease working. The picketers hoped, according to the trial examiner, that university officials would compel Howard "to capitulate to the union's objective that he employ the union's members and sign a contract with it."

He said the union could more logically have picketed Howard's office and shop, 12 miles from the campus, if its real intention was to bring the picket signs to the attention of Howard employees.

Union Training Program Scheduled for TV Series

The construction industry's national training program for plumbers and pipefitters will be used by the AFL-CIO in its new television series called "Americans at Work."

Filming of the 15 minute program began at the union's Fifth Annual Apprentice Contest and Training Program, recently held at Purdue University. Action shots were taken of the contest and the seminars for instructors. Also filmed was a session of the Board of Trustees of the International Training Fund, which was established under the union's international agreement with the National Constructors Association. Other parts of the film will show how the training of apprentices and journeymen is put to work on actual jobs.

The AFL-CIO television films will be offered to TV stations for use on public service time. They are designed to show how the nation's workers "keep the wheels of American industry rolling."

OFFICIAL PROPOSALS

RATE: The rate for Official Proposal advertising is $2.40 per line or fraction set solid. Where the advertisement is set other than solid, the space is measured by total space occupied and charged on basis of 12 lines to the inch.

CLOSING DATE: Friday 10:30 A.M. for issue dated the following Thursday.

SEND COPY TO: Official Proposal Division, Engineering News-Record Class. Adv. Div., P. O. Box 12, N. Y. 36, N. Y.

Bids: October 30, 1958.

New York State Road Works

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.,—Pursuant to the provisions of the Highway Law, Canal Law and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A.M., eastern standard time on the 30th day of October 1958, by Henry A. Cohen, Director, Bureau of Contracts, 12th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following Projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 1, G. L. NICKERSON, District Engineer, 353 Broadway, Albany, New York						
Albany (Rte. 157A)	FARC 58-146	East Berne-New Salem, Pt. 1 S.H. 5501 New Salem-Thompsons Lake Pt. 1, S.H. 5724 East Berne-Clyekman Church, S.H. 978. Project F-409(3)	2.75	Asph Conc.=2.73 Mi. Misc. Work=0.02 Mi.	$35,000 Plans $5	$587,000
DISTRICT No. 2, L. KETCHUM, District Engineer, 109 No. Genesee Street, Utica 1, New York						
Oneida	M-58-13	Delta Dam, City of Rome	....	Rehabilitating Exist. Dam & Electrifying Gate Machinery	$25,000 Plans $10	450,000
DISTRICT No. 3, K. E. TOWLSON, Acting District Engineer, 333 E. Washington St., Syracuse, New York						
Oswego	M-58-14	New York State Lake Terminal, Oswego	....	Remove & Replace Concrete in Exist. North Pier Wall	$2,200 Plans $10	43,500
Tompkins	RC 58-158	S.H. 5225, S.H. 625, (Rte. 13), S.H. 5567, (Rte. 34), S.H. 8284, S.H. 8317, (Rte. 34B), S.H. 926 (Rte. 38), S.H. 1004, S.H. 338, S.H. 483, S.H. 1001, (Rte. 79), S.H. 1921, (Rte. 80), S.H. 616, (Rte. 96), S.H. 5043, S.H. 5122, S.H. 5213, (Rte. 96B), S.H. 1433, (Rte.222), S.H. 5575, (Rte. 227), S.H. 1189, (Rte. 327)	....	Roadside Development	$300 $2 Prop. Only No Plans	5,000
DISTRICT No. 4, B. F. PERRY, District Engineer, Barge Canal Terminal, Rochester 1, New York						
Monroe	FAC 58-20	Rochester City: Inner Loop (Front to North Streets) Contract 3. Project U-1089(9)	0.67	Demolition of Buildings	$8,000 Plans $5	143,000
Monroe	FISH 58-16 FASH 58-17	Interstate Route Conn. 590 (Rochester-Bushnell Basin Pt. 3) Rochester Outer Loop (East Ave. to Blossom Rd.) Project I-1107(7) Project U-1097(3)	1.73 (2.86 Acc.)	9" Cement Conc. Pavt. 2 @ 25' Var. Wide=1.43 Mi. Misc. Work=0.30 Mi. (Access=1.06 Mi. Cement Conc. & 1.78 Mi. Asphalt Concrete) 4 Hy. Sep. Comp. I-Beams 187', 143.5', 183.7' & 244' 1 RR Sep. Comp. I-Beam, 71.8' 1 RR Sep. Plate Girder, 80'	$235,000 Plans $10	4,308,000
DISTRICT No. 5, E. G. H. YOUNGMANN, District Engineer, State Office Bldg., 65 Court Street, Buffalo 2, New York						
Cattaraugus (Rte. 96)	FAC 58-21 FARC 58-149	City of Salamanca: Central Avenue Salamanca-Ellicottville, S.H. 1305. Project U-F-417(7)	1.49	Asph. Conc=1.43 Mi. Misc. Work=0.06 Mi. Comp. I-Beam Bridge 164'	$54,000 Plans $5	983,000
Erie Chautauqua & Niagara	RC 58-150	S.H. 130, S.H. 131, (Rte. 5), S.H. 9215, (Rte. 18B), S.H. 9216, (Rte. 324), S.H. 129, (Rte. 266), S.H. 584, (Rte. 270), S.H. 5670, S.H. 8098, S.H. 8003, S.H. 5262, S.H. 5664, S.H. 8008, S.H. 8033, S.H. 8032, (Rte. 20), S.H. 713, S.H. 729, S.H. 9014, S.H. 1045, S.H. 1315, (Rte. 425), S.H. 8162, S.H. 773, A, S.H. 9095, (Rte. 270)	....	Roadside Development	$600 $2 Pros. Only No Plans	11,000
DISTRICT No. 6, J. H. THOMAS, District Engineer, State Office Bldg., 30 West Main Street, Hornell, New York						
Chemung (Rtes. 14 & 328)	FARC 58-136	Fassett-Southport, S.H. 1561, South Broadway, S.H. 30, Southport, Pt. 1 & Pt. 3, S.H. 13, S.H. 29 Project F-479(14). Project U-479(14)	1.27	Asph. Conc.=1.10 Mi. Misc. Work=0.17 Mi. 2 Prestressed Conc. Bridges 151.8' & 285'	$80,000 Plans $5	1,427,000
Yates	FASS 58-19	Rushville-Ferguson Corn. County Road Project S-499(1)	2.43	Bituminous Macadam Type 1	$18,000 Plans $5	323,000
DISTRICT No. 7, R. W. SWEET, District Engineer, 444 Van Duzee Street, Watertown, New York						
Franklin & St. Lawrence (Rte. 37)	RC 58-153	Malone-Fort Covington, Pt. 2, S.H. 702, (Br. No. 1) Massena-Helena, Pt. 1, S.H. 1261, (Br. No. 2)	....	Painting 2 Brs.	$400 Plans $5	7,000
Jefferson (Rte. 81)	FITS 58-4 FATS 58-3	Interstate Route 505, Section 7C-1 (S.H. FISH 57-2) Section 7C-2, (S.H. FISH 57-12) Sacketts Harbor, (Arsenal Street) S.H. 237 Adams-Watertown, Pt. 2 S.H. 425 Project I-1118(20), Project F-327(11)	12.66	Furnish & Install Traffic Signs	$5,000 Plans $5	90,000
DISTRICT No. 8, K. G. RAUER, District Engineer, Pleasant Valley Road, Poughkeepsie, New York						
Dutchess (Rte. 9)	FARC 58-151	Poughkeepsie-Hyde Park S.H. 453. Project F-322(17)	1.57	Asphalt Concrete	$21,000 Plans $5	399,000
Dutchess (Rte. 361)	FARC 58-152	Millerton-Indian Pond, S.H. 1007. Project S-490(1)	2.36	Asphalt Concrete	$15,000 Plans $5	277,000
Orange (Rte. 17K)	FARC 58-144	Kochecton Turnpike, Pt. 1, S.H. 113. Project U-483(5)	0.74	9" Cem. Conc. Pavt. 2 @ 24' Wide=0.66 Mi. Misc. Work=0.08 Mi. R.C. Box Br. 32.1'	$30,000 Plans $5	523,000
Ulster	RC 58-154	S.H. 5169, S.H. 5601, S.H. 228, S.H. 5000, (Rte. 9W), S.H. 142, S.H. 38, S.H. 37, S.H. 602, S.H. 1882, (Rte. 212)	....	Roadside Development	$500 Plans $5	9,000
Ulster (Rte. 28)	FISH 58-14 FARC 58-145 ST 58-1	Interstate Route Connection 530, (Thruway Access Route 28-Albany Avenue and Broadway in Kingston) Kingston-West Hurley, S.H. 5173 and Access Roads to Catskill Thruway at Int. Route Conn. 530 Project I-IG-1150(1), Project U-1009(2)	1.39 (1.19 Acc.)	9" Cem. Conc. Pavt. 2 @ 24' Var. Wide=1.51 Mi. Asph. Conc.=1.07 Mi. Comp. Beam Br. 346' Pres. Conc. Beam Br. 176'	$175,000 Plans $5	3,169,000
Ulster (Rte. 28)	FARC 58-160	Pine Hill-Griffin Corners, S.H. 5177 Ulster-Delaware Pt. 3, S. H. 31. Project F-659(6)	3.33 (1.47 Acc.)	Asph. Conc.=3.22 Mi. Misc. Work=0.11 Mi. Pres. Conc. Viaduct 591' 4 R.C. Box Brs., 31.3', 20.2', 21.2', 28.1'	$115,000 Plans $5	2,059,000
Westchester	SBP 58-1	Sprain Brook Parkway (Cross County Parkway to Tuckahoe Road)	2.27 (4.69 Acc.)	8" Cem. Conc. Pavt. 2 @ 37' Var. Wide=1.97 Mi. Misc. Work=0.50 Mi. (Access=3.10 Mi. Cem. Conc. and 1.59 Mi. Asph Conc.) 5 Hwy. Seps. Comp. I-Beams 140.2', 298.8', 219.5', 144.5', & 165.6' 2 Hwy. Sep. Comp. Weld. Plate Gird. 200.6', 326' 2 Brs. Comp. I-Beams 64.8' and 73' 6 Brs. R.C. Boxes 42.5', 31', 29', 29', 20' and 28'	$611,000 Plans $10	11,116,000
DISTRICT No. 9, J. C. FREDERICK, District Engineer, 71 Frederick Street, Binghamton, New York						
Broome	FISH 58-15	Interstate Route 505: Penna. State Line to Five Mile Point Cont. 3 (Trim St. to Sunset Drive) Project I-1127(10)	1.89 (0.68 Acc.)	Grading and Drainage 3 Twin Hy. Seps. Comp. I-Beams 126.3' and 124.5'; 131' and 128'; 154.3' and 149.8'	$90,000 Plans $5	1,655,000
DISTRICT No. 10, M. E. GOUL, District Engineer, 325 W. Main Street, Babylon, L. I., New York						
Bronx	FIBE 58-1	Interstate Route Connection 511, Bruckner Expressway (Sect. 2 Cont. 1D). Project I-1068(20)	....	Demolition of Buildings	$9,000 Plans $5	164,000
Nassau & Suffolk (Rtes. 27, 101, 106, 107, 109 & 110)	RC 58-155	Massapequa-Glen Cove, S.H. 9017, Greenvale-Glen Cove, FASH 52-7; Jericho-Oyster Bay, S.H. 9021; Middle Neck Road, S.H. 9019; Conduit Blvd. Pt. 3, S.H. 1699A; Huntington-Amityville, S.H. 1319; Maywood-Babylon, S.H. 1841	8.68	Landscaping	$3,500 Plans $5	63,000
Suffolk (Rte. 25)	FARC 58-157	Jericho Turnpike Pt. 2, S.H. 5111; Smithtown Branch-Coram, S.H. 8258; Coram-Middle Island East, S.H. 8291; Riverhead- Mattituck Pts. 1 and 3, S.H. 8181 Projects F-1000(5); F-432(3); F-448(4); F-348(9)	2.41	Drainage Basins and Misc. Work	$42,000 Plans $5	767,000

(Continued on the following page)

(Continued from preceding page)

Any projects in this letting that are on the Federal Aid highway systems are subject to the provisions of the "Federal-Aid Highway Act of 1956", being Public Law 627, 84th Congress, approved June 29, 1956, and are also subject to the applicable New York State statutes.

In compliance with the provisions of Section 115 (Prevailing Rate of Wage) Public Law 627, the minimum wages to be paid laborers and mechanics are included in wage schedules that are set out in the bid proposal.

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "Information for Bidders" in the Public Works Specifications, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Information for Bidders".

The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

Bids: November 19, 1958

Office of the Director of the Department of Public Works of the City of Newark, New Jersey

City Hall, Newark, N. J.
Date: October 8, 1958

Job Nos. 4164 and 4165 Division of Water Supply

Sealed Proposals will be received at 10:00 A.M. Eastern Standard Time on Wednesday, November 19, 1958, by the Director of the Department of Public Works in Room 309, City Hall, Newark, New Jersey, and then and there at 10:00 A.M. publicly opened and read for the following work which is a part of the Charlotteburg Reservoir Project:

CONSTRUCTING RIVER WALL AND CONSTRUCTING DAM AND RESERVOIR, which will be awarded in two separate Contracts, or in one combined contract, as follows:

CONTRACT NO. CRP-4 RIVER WALL
CONTRACT NO. CRP-5 DAM AND RESERVOIR
COMBINED CONTRACT NO. CRP-4-5 RIVER WALL, DAM AND RESERVOIR

The work under each Contract includes, but is not limited, to the following:

CONTRACT CRP-4 RIVER WALL: This Contract consists of the construction of a river wall along the upstream reach of the future reservoir, adjacent to the tracks of the New York, Susquehanna and Western Railroad. The wall will be approximately 2,000 feet long, and will consist of a plain concrete section approximately 1,600 feet long, varying in height between 6 and 26 feet, and an adjacent reinforced concrete crib section approximately 400 feet long, varying in height between 12 and 16 feet.

The work will include construction of channels, dikes, impervious blanket covered with riprap, and other incidental work.

CONTRACT CRP-5 DAM AND RESERVOIR: This Contract consists of the construction of a concrete gravity dam across the Pequannock River, located approximately one and one-half miles upstream from the existing Macopin Intake Dam, and the relocation of the Charlotteburg Pond-Timberbrook Road.

The concrete dam will be approximately 700 feet long with a maximum height of 100 feet above foundation rock, and will include a spillway 200 feet long surmounted by a bascule gate 5 feet high, a stilling basin, an intake structure complete with operating equipment, a gate house, and other appurtenances.

The relocated section of the Charlotteburg Pond—Timberbrook Road will be approximately 2 miles long, and the relocation will include the construction of a 3-span roadway bridge across the Pequannock River, approximately 180 feet long.

COMBINED CONTRACT NO. CRP-4-5: This Contract includes all work included under Contract CRP-4 and Contract CRP-5.

BIDDERS WHO SUBMIT A BID FOR COMBINED CONTRACT CRP-4-5 MUST ALSO SUBMIT SEPARATE BIDS FOR BOTH CONTRACTS CRP-4 AND CRP-5. BIDDERS WHO DO NOT SUBMIT A BID FOR COMBINED CONTRACT CRP-4-5 MAY SUBMIT A BID FOR CONTRACT CRP-4 AND/OR FOR CONTRACT CRP-5.

The Drawings, Specifications, Instructions, and Information for Bidders, the Bid or Proposal, Contract and Bond forms are on file and may be seen at the office of the Division Engineer, Division of Water Supply, Department of Public Works, Room 101, City Hall Annex, Newark, and at the office of Parsons, Brinckerhoff, Hall & Macdonald, Engineers, Sanitary Department, Room 602, 55 Broadway, New York, New York. Copies may be obtained at the office of Parsons, Brinckerhoff, Hall & Macdonald upon deposit of twenty-five dollars, which sum will be refunded upon return of the Drawings and Specifications in good condition within 30 days after the opening of bids or upon submittal of a formal Bid.

An Agreement of Surety signed by a Surety Company authorized to do business in New Jersey shall accompany each Proposal for execution of Contract on award thereof. Said Agreement of Surety shall be in conformity with the requirements specified in Instructions and Information for Bidders.

Contract No. CRP-4 and Contract No. CRP-5 will each be awarded to their respective lowest responsible Bidder, except that the work will be awarded to the lowest responsible Bidder for Combined Contract No. CRP-4-5, if the sum of the low bids for the two Contracts exceeds the low bid for the Combined Contract.

All Proposals are subject to the requirements of all laws and City ordinances affecting same. The Bidder's attention is called to Section 2.58 of the City Administrative Code.

By direction of the Director of the Department of Public Works of The City of Newark.

George W. Andress
Director, Department of Public Works

U. S. Government

GOVT. OF DISTRICT OF COLUMBIA, DEPT. OF HIGHWAYS AND TRAFFIC, D. C., September 24, 1958. SEALED PROPOSALS will be received in Room 404, 499 Pa. Ave., N.W., Wash. 1, D. C., until 2 PM, EDT, October 22, 1958, and then publicly opened and read for constructing the Anacostia Freeway Overpass at Naval Research Laboratory (Federal Aid Project No. I-04-1(7), consisting of approximately 19,000 cu. yds. of Backfill and Fill; 1,800 cu. yds. concrete; 170,000 lbs. reinforcing steel; 9,550 lin. ft. "Cast-in-place Concrete Piles"; 1,800 cu. ft. Stone Masonry; 180,000 lbs. Structural Steel; and 570 lin. ft. 20-Inch Prestressed Concrete Pipe Water Main, Including Fittings and Specials. Minimum wage rates for this project has been predetermined as required by law and are set forth in the bid proposal. Proposal forms, plans and specifications obtainable from Supervisor, Bid & Contract Section, Procurement Office, D. C., Rm. 404, 499 Pa. Ave., N.W., upon deposit of a certified check for $20.00 per set, payable to D. C. Treasurer. (phone Na 8-6000, Ext. 2378).

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC. 5115) will be received at Kanab, Utah, until 10 a.m. Mountain Standard Time, November 13, 1958, for furnishing labor and materials for Administration Building and Garage, Fire Station and Police Building for Page, Arizona, Glen Canyon Unit, Arizona-Utah, Colorado River Storage Project. Location near the Glen Canyon Dam site on the Colorado River approximately 15 miles upstream from Lees Ferry, Arizona in Coconino County. Principal items are lump sum—constructing Administration Building; lump sum—constructing Garage, Fire Station and Police Building; and other work. Completion time 300 days. For particulars, address Bureau of Reclamation, P. O. Box 360, Salt Lake City, Utah; P. O. Box 267, Kanab, Utah; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

Prequalification Date: October 23, 1958

Board of Education Bureau of Construction

Notice Re: Prequalification Forms of Contractors

NOTICE IS HEREBY GIVEN THAT The Superintendent of School Buildings, Bureau of Construction, 4th Floor, Room 407, 42-15 Crescent Street, Long Island City 1, N. Y. will receive application for prequalification from contractors who may wish to submit bids for the proposed hereinafter specified contracts as follows:

General Construction, Plumbing and Drainage, Heating and Ventilating, Electrical Work and Lighting Fixtures for the Modernization of Public School 171, Manhattan, East 103rd Street and Madison Avenue.

Prequalification application forms will have to be secured from and must be submitted to the Superintendent of School Buildings, Bureau of Construction, 4th Floor, Room 407, 42-15 Crescent Street, Long Island City 1, New York.

Bids when advertised, will be received from prequalified bidders only.

Time for submitting prequalification application by contractors will expire on Thursday, October 23rd, 1958.

WILLIAM H. CORREALE
Superintendent of School Buildings,
Design and Construction
DATED: OCTOBER 6, 1958
City Record—Monday, October 13th, 1958

Bids: November 18, 1958

Contract EXD-230.001

RE-ADVERTISEMENT
THE PORT OF NEW YORK AUTHORITY
PORT AUTHORITY BUILDING
FOURTEENTH FLOOR ALTERATIONS

Sealed proposals for performing alterations to the Fourteenth Floor of the Port Authority Building at 111 Eighth Avenue, New York 11, N. Y., will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, November 18, 1958, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Assistant Chief Engineer for Design of the Authority, Room 1115. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawing). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt will be issued. The receipt shall be delivered to Room 1115, where the documents will be furnished.

Those who have submitted directly to the Authority a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman
New York, October 16, 1958

Bids: November 6, 1958

Railroad Bridge

The Chicago, Rock Island and Pacific Railroad Company, W. B. Throckmorton, Chief Engineer, is taking bids, due on November 6, 1958 at 11:59 A.M. C.S.T., for the construction of a double track 280' fixed span truss with 30' beam approaches each end. This is Bridge No. 167-A carrying the interchange tracks over Calumet-Sag Canal at Blue Island, Illinois.

Separate bids will be taken for the substructure and superstructure of this bridge. Plans and specifications may be obtained at the Engineer of Bridges' office, Room 403, LaSalle Street Station, 139 West Van Buren Street, Chicago 5, Illinois.

READ THE OFFICIAL
PROPOSAL COLUMN OF
ENGINEERING NEWS-RECORD
THIS WEEK AND EVERY WEEK

OFFICIAL PROPOSALS

Bids: October 30, 1958

Contract B.P. 58-69

NOTICE TO CONTRACTORS

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Public Building Law and Highway Law, sealed proposals will be received, until 10:30 A.M., D.S.T., October 30, 1958, by Henry A. Cohen, Director, Bureau of Contracts, 12th Floor, The Governor Alfred E. Smith State Office Building, Albany N. Y. for:

Contract B.P. 58-69 for Beach Protection (Artificial Beach Nourishment) at Davis Park, Town of Brookhaven, Suffolk County, New York.

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts, 12th Floor, The Gov. Alfred E. Smith State Office Bldg., Albany, New York.
(b) Department of Public Works, 270 Broadway, New York City, New York.
(c) In addition to the above mentioned offices, plans, maps and specifications for Contract B.P. 58-69 may be examined and obtained at the office of Mr. Milton E. Goul, 325 West Main St., Babylon, L. I., New York.

The deposit for Plans and Proposal Forms for Contract B.P. 58-69 is $10.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

The Engineer's Estimate of Cost for Contract B.P. 58-69 is $73,000.00.

Proposals for Contract B.P. 58-69 must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check, payable to the order of the State of New York, Commissioner of Taxation and Finance for the sum of $4,000.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Public Building Law and to the Highway Law as set forth in "Instructions to Bidders" in the contract specifications.

The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

Bids: October 29, 1958

Railroad Interlocking Tower

The Chicago, Rock Island and Pacific Railroad Company, W. B. Throckmorton, Chief Engineer, is taking bids, due on October 29, 1958 at 11:59 A.M. C.S.T., for the complete construction of a three story masonry interlocking tower building near Vermont Street station at Blue Island, Illinois. Plans and specifications may be obtained at the Engineer of Buildings' office, Room 702, LaSalle Street Station, 139 W. Van Buren Street, Chicago 5, Illinois.

CONTRACTORS WATCH THIS SECTION

for New Projects

Publish your announcements thru the "Proposal Section" of Engineering News-Record and get their bids.

FOR RATES OR INFORMATION

About Classified Advertising

Contact The McGraw-Hill Office Nearest You.

ATLANTA, 3—Rhodes-Haverty Bldg. JAckson 3-6951
D. C. BILLIAN

BOSTON, 16—350 Park Square HUbbard 2-7160
D. J. CASSIDY

CHICAGO, 11—520 No. Michigan Ave. MOhawk 4-5800
W. J. HIGGENS - D. C. JACKMAN

CLEVELAND, 13—1164 Illuminating Bldg., 55 Public Square SUperior 1-7000
W. B. SULLIVAN - F. X. ROBERTS

DALLAS, 1—901 Vaughan Bldg., 1712 Commerce St. Riverside 7-5117
GORDON JONES - F. E. HOLLAND

DETROIT, 26—856 Penobscot Bldg. WOodward 2-1793
J. G. GRANT

LOS ANGELES, 17—1125 W. 6th St. HUntley 2-5450
R. L. YOCOM

NEW YORK, 36—500 Fifth Ave. OXford 5-5959
D. T. COSTER - R. P. LAWLESS

PHILADELPHIA, 3—Six Penn Center Plaza LOcust 8-4330
H. W. BOZARTH - T. W. McCLURE

ST. LOUIS, 8—3615 Olive St. JEfferson 5-4867

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EMPLOYMENT NATIONAL COVERAGE OPPORTUNITIES

DISPLAYED RATE:

The advertising rate is $39.20 per inch for all advertising appearing on other than a contract basis. Frequency rates quoted on request.

An advertising inch is measured 7/8" vertically on a column—3 columns—30 inches to a page.

Subject to Agency Commission.

OCTOBER 30th ISSUE CLOSES OCTOBER 20th

UNDISPLAYED RATE:

$2.40 per line, minimum 3 lines. To figure advance payment count 5 average words as a line.

Position Wanted ads take ½ of above rate.

Box numbers—count as 1 line.

Discount of 10% if full payment is made in advance for 4 consecutive insertions.

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Send NEW Ads and Inquiries to Classified Advertising Division of ENGINEERING NEWS-RECORD, P. O. Box 12, N. Y. 36.

ADDRESS BOX NO. REPLIES TO: Box No. Classified Adv. Div. of this publication. Send to office nearest you.
NEW YORK 36: P. O. BOX 12
CHICAGO 11: 520 N. Michigan Ave.
SAN FRANCISCO 4: 68 Post St.

• POSITIONS VACANT

Highway Engineers—Highway Engineers with a minimum of 3 years experience. Excellent opportunity with established consulting engineering firm in Middle West. P-7909, Engineering News-Record.

Water Treatment Engineer Must have had experience in the design of filtration plants, water softening, and iron removal. Registration desirous but not necessary. Consulting Engineering firm in the Midwest. State education, background and experience. P-8887, Engineering News-Record.

Civil Engineer: City of Middletown, Ohio, invites applications. Registration as a professional Engineer in the State of Ohio required. Salary starting $6843.20 per year with increase after six months and each year thereafter for next three years to final salary of $8132.80 per year. Also fringe benefits. Contact Director of Public Service, P. O. Box 530, Middletown, Ohio.

• POSITIONS VACANT

Architectural draftsman for school and shopping center planning. Experience required—First class draftsman and designer, specification writing. Permanent position for qualified man. Write P. O. Box 207, Lancaster, Ohio giving qualifications, experience and salary or call Lancaster, Olive 3-4316 for appointment.

Aggressive graduate Civil or Structural Engineer aged 25-33 as estimator and office engineer in Louisiana. Experience in concrete quantity take-off and handling sub-contracts preferable. Incentive bonus plan. Salary $160.00/week to start. Opportunity for first class man leading to management of Southern Office of construction company engaged in specialized concrete structures. Write full resume. Starts immediately. P-9038, Engineering News-Record.

Wanted Registered Architect with 4 or more years experience. Excellent opportunity with established consulting engineering firm in middle west. State education, background and experience. Reply to P-8615, Engineering News-Record.

Assist. Prof.—To teach undergrad. courses in structures and mechanics. Salary open. Civil Eng., Univ. of No. Dak., Grand Forks.

• POSITIONS VACANT

Wanted Architectural Draftsman with 2 or more years experience. Excellent opportunity with established consulting engineering firm in middle west. State education, background and experience. Reply to P-8590, Engineering News-Record.

Structural Detailers for growing steel fabricator located in Northern, New York. Minimum of three years experience opportunity for ambitious men to grow with Company. P-9064, Engineering News-Record.

Experienced engineer or superintendent wanted for road and state highway construction in Ohio. P-9101, Engineering News-Record.

Bridge Superintendent—On Group of Highway Bridges in Center Mississippi to Work under Project Manager. Must be Thoroughly Experienced Particularly in Forming and Concrete Work, and be Able to Find or Train an Organization. This is a Permanent Job. We are Looking for a Man Capable of Developing His Own Organization. Salary Open, Plus Bonus, Profit Sharing, and Hospitalization. P-9105, Engineering News-Record.

(Continued on opposite page)

ENGINEERING DESIGN PERSONNEL

For Work On Highway, Bridge, Water and Sewerage Projects
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Career opportunities for individuals interested in professional recognition, ample opportunity for advancement based on merit, plus employee retirement plan, group life insurance, hospitalization, paid vacation and holidays.

Mail Resume To F. W. AHERN, Personnel Director

MICHAEL BAKER, JR., INC.
Consulting Engineers
Baker Building — Phone SPruce 4-3010 — Rochester, Penna.

SANITARY OR CIVIL ENGINEER

Small engineering firm in Southeastern Pennsylvania. Applicant should have experience and ability to make preliminary investigations and reports, design and prepare construction plans and specifications for sewer and water projects. Send resume of experience, education and state salary desired.

P-9026, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

FIELD ENGINEER

Field Supervisor, building construction. Thoroughly qualified and experienced man for permanent position. Moving expenses paid. Submit qualifications, including educational background and experience record, in writing. All replies will be answered.

A. M. KINNEY, INC.
2905 Vernon Place, Cincinnati 19, Ohio

• *POSITIONS VACANT*

(Continued from opposite page)

Structural Steel—Sales and Engineering. Must be capable of assuming full responsibility for estimating, selling and detailing operations, for a medium size fabrication plant in St. Louis, Missouri. Minimum 10 years experience with a degree in engineering. Salary open. P-9107, Engineering News-Record.

Soil Scientist Wanted for Soil Survey and Land Classification Project. Ph D graduate in soil science supplemented by a minimum of three years' experience in soil survey and classification work. Or B.S. or M.S. graduate in soil science supplemented by a minimum of six years' experience in soil survey or land classification and evaluation work for agricultural use. Approximately 2 years employment. Salary, I.D. 250. Nationality no restriction. Embassy of The Republic of Iraq, Washington, D. C.

Mechanical Estimator with field experience to estimate and check field work for New York City General Contractor's Piping and Equipment installation Dept. Excellent opportunity to head department. P-9108, Engineering News-Record.

Fabricating Contracts Executive. Sales contacts with Western Pennsylvania buyers of structures. Future in management. To $20,-000. Project Engineer. Permanent staff position. Experience in heavy construction supervision and estimating. To $12,000. Chief Engineer. Proven Supervisory record with a structural steel fabricator. To $12,-000. Companies assume our fee. Send two resumes including age, salary, education and experience in confidence to R. S. MacQuown (Graduate Engineer, Carnegie Tech), President, Tomsett Associates, Inc., Engineering Personnel Consultants, 431 Frick Building, Pittsburgh 19, Pa.

• *POSITIONS WANTED*

Superintendent of heavy excavation earth and rock. PW-8930, Engineering News-Record.

Estimator—Chief Engineer with experience in both field and office on all types of work, invites replies from progressive Heavy Construction Contractors. PW-8961, Engineering News-Record.

Sr. Project Eng. B.S. Architectural Engineering, 32 yrs. old, wide experience design, construction programing, project management & estimating. Prefer small construction &/or engineering co. Available immediately. PW-9115, Engineering News-Record.

(Continued on the following page)

McKEE's Continued Expansion

offers excellent opportunities for

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Must have at least ten years responsible design and engineering experience in any of the following or allied fields:

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Send resume and photo to:
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Arthur G. McKee & Co.
2300 Chester Ave. — Cleveland 1, Ohio

SEWAGE TREATMENT PLANT OPERATOR AND INCINERATOR OPERATOR

Permanent positions available for operators of new plant with the Whitemarsh Township Authority, Montgomery County, Pennsylvania. Experience mandatory. Send full details concerning education, experience, salary requirements, references, and other personal data to Willard E. Hargreaves, Sewer Manager, Whitemarsh Township Building, Joshua Road, Lafayette Hill, Pennsylvania.

HIGHWAY ENGINEERS

Well known engineering and construction firm is interested in receiving applications from qualified graduate engineers for work in Central and South America. Must have had highway experience. Should be fluent in Spanish. Pertinent categories follow: Project managers, location engineers, design engineers, soils and materials engineers, construction engineers, maintenance engineers, bridge design engineers, administration and accounts manager.

Interested parties should mail application and resume of experience to:

CHIEF ENGINEER
P. O. Box 3 — Houston 1, Texas

ESTIMATOR

Midwest engineering and construction company seeks estimator thoroughly experienced in preparation of competitive bid estimates for industrial type projects. Will be responsible for complete estimate from basic take-off to final submission form. Prefer graduate Civil Engineer with a minimum of ten years applicable experience. Will consider non-graduate who has considerable experience. Liberal fringe benefits. All replies confidential.

P-9022, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

ENGINEERS

PERMANENT OPENINGS FOR QUALIFIED MEN EXPERIENCED IN THE DESIGN OR SPECIFICATIONS FOR

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Paid vacation, sick leave, holiday, overtime. Excellent Employee Benefits Plan provides retirement income plus life and disability insurance. Blue Cross. Moving allowance.

Work will be in the general offices in St. Louis. Interviews can be arranged in Washington, D. C., and San Francisco also.

Please write fully, including salary data, to

SVERDRUP & PARCEL, Inc.
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915 Olive — St. Louis 1, Mo.

ENGINEERING MANAGER

A Los Angeles Engineering and Construction firm has an opening for an Engineering Manager to plan, organize and administer engineering activities of one of its divisions. This position entails the setting of policies, representing the corporation on engineering and design matters, and reviewing engineering concepts.

Candidate should have an engineering degree from an accredited university and at least 15 years experience in the design and supervision of design of heavy industrial facilities. Recent experience in the engineering management of large scale engineering projects and familiarity with construction problems also required. Please submit resume to:

P-9020 Engineering News Record
1125 W. 6th St., Los Angeles 17, Calif.

• POSITIONS WANTED

(Continued from preceding page)

Structural Engineer, 50, leaving for Australia October 26, 1958 will welcome opportunity to work as Engineer or technical representative. Have been self-employed as Consultant to Architects and Industry for the last 14 years. Detailed resume on request. PW-8970, Engineering News-Record.

Graduate Student (Structures with some Sanitary) age 28, 2 yrs. exp. in Sanitary field work. Available Feb. Prefer Midwest. PW-8962, Engineering News-Record.

Electrical Engineer: Thirty-Five years experience all phases of electrical and mechanical construction and operation. Married, no children, free to travel. Excellent health. Layout and design. Prefer field construction. PW-8976, Engineering News-Record.

Project Manager or Construction Superintendent 25 years experience, heavy construction on heavy industrial, steel mill or oil refinery installations. Best references of proven accomplishments, available on short notice. Willing to travel. PW-8981, Engineering News-Record.

Concrete Inspector, Canadian, recent immigrant. Age 30, 10 years experience in hydroelectric and heavy industrial concrete inspection. Member A.C.I. & A.S.T.M. Excel. references. Experienced all phases of control and construction. PW-8994, Engineering News-Record.

Superintendent Sewer Construction, age 46, 23 years experience, familiar with all phases of installation. PW-9033, Engineering News-Record.

Construction Executive, thoroughly familiar all phases construction industry, i.e. estimating, supervision, business solicitation. Experience covers wide range diversified projects. PW-9032, Engineering News-Record.

Manager; Project or District. 30 years experience in powerhouse, industrial, chemical plant, heavy construction, sewage, and filtration plants. Estimates to completion. Engineering education. Available first of November. PW-9057, Engineering News-Record.

Sanitary Engineer, P.E. with 35 years experience in water supply, water treatment, sewers and sewage treatment. Excellent health. Experience in direction of engineering staff in the production of contract drawings and supervision of construction. Member of and active in Technical Societies. PW-9048, Engineering News-Record.

Former Contractor and heavy construction equipment superintendent, 20 years experience in Europe, South America and domestic desires superintendent's position on earthmoving project in Central or S.A. Now employed in S.A. PW-8860, Engineering News-Record.

Construction Gen. Foreman or Supt. 25 years experience in heavy Construction presently employed, worked 13 years for the same company. PW-9068, Engineering News-Record.

Gen'l. Supt., Proj. Mgr. or Estimator. 25 yrs. expr. building const. Available for responsible position. Prefer Texas, Arizona, California or Florida. PW-9069, Engineering News-Record.

Civil Engr.—14 yrs. experience all phases of heavy industrial and small construction. Proven ability to push jobs and save money. Wants to stop traveling and establish home. PW-9072, Engineering News-Record.

Graduate Eng., 45, lic. NYS, heavy and diversified experience plumbing design and drafting. Additional experience sanitary, process, fire protection. PW-9078, Engineering News-Record.

BSCE, MSCE, Structural Major, 32. 4 yrs. in heavy industrial structures. Competent to design or supervise structural design on concrete and steel structures. Familiar with theory of prestressed concrete. Desires challenging position here or overseas. Resident U.S.A. PW-9102, Engineering News-Record.

Civil Engineer, M.S.C.E.: Age 26; 3½ yrs. exp. field & office; desires position with gen'l contractor; N. Y. area. PW-9109, Engineering News-Record.

Sales Engineer, 30, married, ten years sales and promotion precast products. Excellent following highway, heavy, sewer contractors and consultants New York Area. PW-9100, Engineering News-Record.

• POSITIONS WANTED

Civil engineer, graduated, 6 years varied design and field experience, wants responsible position Southwest—South. PW-8957, Engineering News-Record.

Sewer foreman, middle age, Italian, experienced, attentive and honest; capable to assume skillfully the complete responsibility of running a sewer job, is interested in permanent position with ambitious contractor. PW-9095, Engineering News-Record.

Construction Executive; Substantial and successful record as a producer. Minimum $15,000.00, general, or construction manager level. PW-9096, Engineering News-Record.

Structural Steel Executive—20 years experience all types of buildings and platework. Will relocate, anywhere. PW-9110, Engineering News-Record.

Registered engineer with experience in manufacture of prestressed concrete and eleven years experience in concrete promotion qualified to take complete responsibility for sales, engineering and production of structural concrete or related products available for position with producer or as manufacturers representative. PW-9113, Engineering News-Record.

• POSITIONS WANTED

Gen. Super.—Proj. Engr., C.E., 46, 23 yrs. experience with men and work on 3 continents, supervision and engineering, highways, bridges, R.R., heavy construction, 5 languages, desires responsible position with progressive contractor or engineering firm. S. America preferred. PW-9112, Engineering News-Record.

Project/Field Manager or Gen. Supt. 25 yr experience on dams, highways, air bases and buildings. Managed many multimillion-dollar projects. Since 1955, project manager large air base in Montana, now being completed. Minimum salary $14,000 plus profit sharing. PW-9116, Engineering News-Record.

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UNDISPLAYED RATES

$2.40 a line, min. 3 lines. To figure advance payment count 5 average words as a line.

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Experienced Reinforced Concrete and Structural Steel detailers, designers and checkers, in Buildings and Highway Bridges, desire work on contract and subcontract basis. Gustav Deltscheff, 1030 So. Frederick Street, Arlington 4, Va.

Design, specifications, contract drawings, for all types of simple, continuous, and long span bridges. Tight time schedules met. Professional Engineers. Bridgeway Associates, P. O. Box 1711 Church St. Sta., N.Y.C.

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Holder of large parcels of ripe sites for housing and Shopping Centre Developments in the demand areas of Florida.

We have large acreages of fine land. Principals of wide experience in planning, designing and who have had experience in this type of work to open developments into key areas in Florida. Principal must have some cash to invest with owners of land and also to have the experience to run projects. Very little capital is needed as terms will be very flexible. A great opportunity for the right man with the know how. We are not offering employment, but party must have capital or a Company who has developed areas and has proper organization and the equipment to lay out streets, dredge and build homes.

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GM diesel. Thoroughly maintained.
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1—Ingersoll-Rand Air Compressor, 358 C.F.M., steam driven
1—Worthington Air Compressor, 350 C.F.M., steam driven
1—G. E. Direct Current Generator, 60 K.W., 230 volts, belt driven
1—Crocker-Wheeler Direct Current Generator, 60 K.W., 250 volts, belt driven
6—H.R.T. Boilers, 200 H.P. each
1—H.R.T. Boiler, 250 H.P.
1—Sturtevant Blow Pipe Fan, 70", double impeller
1—Dixie Blow Pipe Fan, 60", single impeller
2—Ross Straddle Carriers, capacity 20,000 lbs. each
2—Plymouth Gasoline Locomotives, 3-ton, standard gauge
1—Plymouth Gasoline Locomotive, 5-ton, standard gauge
1—Pearless 6 x 6 Power Hack Saw, 3-speed
1—Harrington Planer, 26" x 108" bed
1—Putnam Lathe, 10-speed, 60" swing, 18' bed
1—American Lathe, 10-speed, 24" swing, 9' bed
1—Smith & Mills Shaper, 20" stock
15—Direct Current Motors, 230 volt, ¾ to 25 H.P.
1—Western Electric D.C. Generator, 125 K.W., 250 volts, direct connected to center-crank Skinner steam engine

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PORTABLE POWER WINCH!

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This PORTABLE POWER WINCH . . . with 11.1 H.P. genuine Waukesha 2 cylinder 4 cycle gasoline motor . . . pulls 3000 or more pounds 50 feet per minute, or 1500 pounds at 100 feet per minute or other combinations. Engine develops enough power for 3000-6000 pound load. Drum will handle 400 feet of ⅜" cable or equivalent amounts of other sizes. Gov't. surplus, never used. This offer is truly a bargain!

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650-B Bucyrus Erie Elec. Drag, 195', 16 yd.
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9-W Bucyrus Erie Diesel Drag, 175', 13 yd.
625 Page Diesel Drag, 150', 10 yd.
723 Page Diesel Drag, 130', 10 yd.
621-S Page Diesel Drag, 125', 7 yd.
200-W Bucyrus Erie Diesel Drag, 125', 6 yd.
7-W Bucyrus Erie Diesel Drag, 100', 5 yd.
5-W Bucyrus Erie Diesel Drag, 100', 6 yd.
2400 Lima Dragline, 150', 5 yd.
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Code Uniformity Still Needed

BENEFITS OF STANDARDIZATION are to a large extent denied the building industry because of the variation in building-code requirements from one community to the next. Designers, builders, mortgage lenders, the general public and many manufacturers of building materials and installed equipment want these variations eliminated because they are unnecessary and add to construction costs. What then blocks uniform building regulations?

Analysis of the causes of these variations leads to the conclusion that they arise from lack of a single standard that can be used as a basis for comparison, and from failure of the building industry to act as a unit on the local level.

The latter can be rectified by formation of local building industry groups, if they don't already exist, to promote the welfare of the industry and to take an active interest in improvement of building codes. If such groups already have been established, they can be helpful in ending present building-code chaos by backing changes in their local codes to bring them in line with one of the national or state model codes. Better still, if a national standard code could be agreed on, these groups could work toward its local adoption.

There are several possibilities for remedying the lack of a national standard code, including development of a brand-new code by the proponents of standardization or adoption of one of the existing model codes as a national standard. The latter appears to be the least expensive course and has the virtue of securing the backing, initially at least, of the sponsors of that particular code.

But by far the best way to start toward uniform building regulations is for the sponsors of the existing model codes themselves to eliminate their differences. And the first step is a merger of the existing building officials organizations.

Situation Normal

HOUSING STARTS during this year of recession seem likely to total 1.1 million units despite the worries of homebuilders and the dire consequences predicted in Congress over its failure to pass a big emergency spending bill. Housing starts next year probably will be just as large despite current forebodings of doom engendered by rising interest rates.

One reason this prediction can be made is that anxieties, loudly expressed, are normal where housing is concerned. Another is that 1 million housing starts has so generally been accepted as a modern minimum that any one of a dozen emergency measures would be taken if necessary to assure it.

Why housing gives rise to worries is easy to see. It is such a big and important part of the economy that there is logical concern for its health. Activity among the various kinds of housing shifts so frequently that someone is always getting hurt, and this stimulates outcries. And finally, housing has many sociological-political aspects, which make sure that controversy will not lag.

Housing will continue to contribute its fair share to the construction totals in the year ahead. But, as always, vocal sounds will accompany the noise of the hammers.

Plan for Winter

CONTRACTORS who have to work in cold climates have learned to take zero weather in stride. One of the most useful expedients is to plan in advance so that enough inside work or work easily protected from the weather will be available to keep the job going. Such planning may show that certain job elements should be built out of their ordinary sequence. It may even reveal that some fair-weather overtime is justified to rush a part of a job to a stage where cold weather will not slow progress.

For many parts of the country there is still time to plan for winter.

More Money for Roads

THERE IS INCREASING EVIDENCE that the pay-as-you-go plan for paying the federal share of the highway program is not going to work. Not only has gas tax money failed to flow into the Highway Trust Fund fast enough, but estimates of the cost of the highways themselves have gone up. What has happened is interesting. What may happen is crucial.

The first sign of difficulty was, of course, reflected in the Congressional action suspending the pay-as-you-go policy for the next two years, and permitting the Treasury to supplement the Trust Fund as needed. Now, however, concern is being expressed over the fact that these Treasury advances increase the general budget defict, and should in some way be stopped.

It will no doubt be proposed that the federal gas tax be raised to bring in additional revenue. But this would tend to preclude any further increases in state gas taxes at a time when the states need road money as badly as does the federal government.

Another possible solution would be to issue special federal bonds, supported and amortized out of future federal road revenues. Such bonds were, in fact, proposed by the Clay committee as one way to finance the highway program, but were rejected as too unorthodox for the federal government to consider.

Perhaps opinions have changed. In any event, conditions have changed with respect to the cost of the roads that must be financed. So if the roads are to be built on schedule, some new methods of financing will have to be sought.